THE IEEE IGDTUW GAZETTE

Annual Newsletter of the Student Branch of IEEE IGDTUW

In This Issue

VOLUME 02

OCTOBER 2022

ACKNOWLEDGEMENT & DISCLAIMER

We sincerely acknowledge the contributions of all the authors in bringing out this news letter .

The views and opinions expressed are those of the respective author and do not necessarily reflect the official policy or position of IEEE IGDTUW.

You can mail us at:
igdtuieee@gmail.com

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CORE TEAM

STUDENT BRANCH CHAIR

Himanshi Gupta

Hello, I am Himanshi Gupta. I recently graduated with a Btech in Electronics and Communication Engineering degree from IGDTUW. I have also been a treasurer, in the previous term, apart from being the student chair for IEEE IGDTUW and was also the recipient of Dr. J.K. Pal Memorial Award and Outstanding Student Volunteer award as an active volunteer. I am currently employed with NXP semiconductors as a Design Engineer.

EDITORIAL BOARD

EDITOR-IN-CHIEF

Kirti Bhardwaj

Greetings! I am Kirti Bhardwaj, a recent graduate with a Masters degree in Computer Applications from IGDTUW. I have been associated with IEEE IGDTUW since 2020 when I first joined as a part of their Junior Executive Committee. The year following '20, I served as an Editorial Head in their Senior Executive Committee and as an Editor-in-Chief for the Editorial Board. Along with the above, I am a strong advocate for mental health and have volunteered with several NGOs and nonprofits. In my free time, you can find me meditating, reading or spending quality time with my family and friends.

CORE TEAM

ASSOCIATE EDITOR

Charvi Bansal

Hey! I am Charvi Bansal, currently pursuing B.Tech in Electronics and Communication Engineering from IGDTUW. I have recently completed my sophomore year and am excited to know what awaits me in the pre-final year! I have been volunteering with IEEE IGDTUW for one year now. I am the upcoming Content Head for the session of 2022-23. I love listening to good music and going on long walks. IEEE IGDTUW has been an essential part of my college life and I hope to stay connected with the organization in the future as well. Cheers!

ASSOCIATE EDITOR

Arushi Garg

Hey! I am Arushi Garg, currently pursuing BTech in Electronics and Communication from IGDTUW. I have recently completed my second year and am looking forward to my pre-final year. I was a part of the IEEE Junior Executive Committee last year and for the upcoming year, I will be taking up the position of Technical Head for the year 2022-23. I am a tech-enthusiast and have been working and researching in the field of Machine Learning and Deep Learning.

CORE TEAM

ASSOCIATE EDITOR

Manika Joshi

Hey everyone, I am Manika Joshi, an upcoming final-year student majoring in Electronics and Communications. I am the vice-chairperson of IEEE IGDTUW for the session 2022-23. I love exploring new technologies, blogging, and reading novels.

DESIGN TEAM

GRAPHIC DESIGNER

Prabhnoor Kaur Bawa

Hello! I am currently pursuing my B.Tech. in Electronics and Communication from IGDTUW. I have been a part of the IEEE IGDTUW community for the past year. My interests lie in the fields of IoT and Digital Design. I am always keen to learn more about upcoming technologies. I am who you might call an "ecofreak" and have been a part of communities fighting and raising awareness about climate change since my school days. My hobbies include sketching, graphic design and photography.

CORE TEAM

GRAPHIC DESIGNER & PR

Abhilasha Sharma

Hey! I am Abhilasha Sharma, pursuing B.Tech in Electronics and Communication Engineering at IGDTUW. I have recently completed my sophomore year and am excited to know what adventures await me in the pre-final year! I have been volunteering with IEEE IGDTUW for one year now. I am the upcoming Public Relations Head for the session of 2022-23. My interests include listening to music, reading, singing, sketching,etc. IEEE IGDTUW has always been an essential part of my college life and I am looking forward to many more productive years with this organization.

CONTACT US

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Facebook: https://www.facebook.com/ieeeigdtuw/

LETTER FROM THE IEEE IGDTUW BRANCH COUNSELOR

Welcome,

Ever since its inception IEEE IGDTUW has always thrived to bring advancement in the student community. Our initiative of publishing an annual newsletter, the first of which was released in the previous session of 2020-21, garnered the attention of students and professionals alike along with loads of appreciation for the fresh perspectives it brought to light.

This year, yet again, through this collaboration, we aim to present a kaleidoscopic view of advancements in technology today with the aim of not only empowering our readers but to inspire them to remain faithful to the spirit of ingenuity, entrepreneurship and innovation that binds all engineers and leaders together.

PROF. JASDEEP KAUR DHANOA

PROFESSOR AND DEAN

(ACADEMIC AFFAIRS)

IEEE IGDTUW BRANCH COUNSELOR

As the branch advisor of the IEEE IGDTUW student section, I welcome our readers and express my gratitude to the contributors of this newsletter - our team and writers, for their efforts in bringing this session's newsletter to fruition.

Wishing everyone all the very best!

LETTER FROM THE WIE IGDTUW BRANCH COUNSELOR

PROF. NIDHI GOOEL

PROFESSOR AND HOD (ECE)

IEEE IGDTUW BRANCH ADVISOR

The IEEE Student Branch of IGDTUW has always been an organization that promotes the growth of the student community. It cultivates a positive environment for students to showcase their mastery and passion for technology. Over the years, the student branch has cumulatively tried to broaden the horizon of our students with plenty of activities, workshops, webinars, and competitions in which students participate and contribute with extraordinary zeal and creativity.

Nothing makes me more proud than the release of Volume 2 of this year's newsletter - The IEEE Gazette. I wish my heartiest congratulations to the editorial team of 2021-22 and contributing writers who penned down their experiences for the benefit of the student community. Indeed, this newsletter would not have come into being without the countless hours and efforts of our volunteers.

With the hopes of commemorating and spreading knowledge, I humbly invite all to benefit from the wisdom shared within these pages and to impart the same to your friends and family.

Let's learn and grow together!

EDITOR'S NOTE

Discussing the vision and theme of The IEEE IGDTUW Gazette, Vol. 2

KIRTI BHARDWAJ
EDITOR-IN-CHIEF

Hello,

To say that I am excited to be writing to our readers about this term's newsletter, would be an understatement of great proportions.

The IEEE IGDTUW Gazette is an yearly tradition of the Editorial Board at IEEE IGDTUW. Each year a team is built and the writers are handpicked, followed by hours and hours of brainstorming, collection, editing, proofreading and finally, publication. As someone who has seen the evolution of The Gazette, first as an associate editor and now, as an Editor-in-Chief, I am proud to bring to our readers the second installment of our newsletter.

Our vision, this time around, was to bring together story-tellers, both empathic students and compassionate professionals alike, whose achievements are beyond their age and who also happen to be tech-enthusiasts, entrepreneurs, developers and leaders. Inside this edition, you will find a guide to navigate life as an engineering student, a roadmap to Web3.0, an extensive study on Blockchain and pathways to career options that defy convention.

You will find stories as told by those who lived them - people like you and me, who learnt more from failures than their triumphs.

My thanks are due to the faculty advisors, my team and the real heroes of this project - our writers for their rich contribution which we now present to you.

I would like to end this note by dedicating a quote to all our readers, that says -

"A journey of a lifetime begins with the turning of a page."
-Rachel Anders

Keep reading!

AWARDS & RECOGNITIONS

It feels great to be rewarded and recognised for our efforts and hard work. Members of IEEE IGDTUW have been facilitated with various awards and recognitions for the session 2021-22

- **JK Pal Memorial Award**

  Himanshi Gupta (B.TECH ECE, 2018-2022)

- **Outstanding Student Award**

  Aastha Bansal (B.TECH CSE, 2019-2023)

- **Outstanding WIE Student Award**

  Rashmi Saini (B.TECH ECE, 2018-2022)

- **IEEE Delhi Section Student Network Award**

  Pallavi (B.TECH ECE, 2019-2023)

1 PROGATE LEARNING WEEKEND

3RD - 5TH JULY, 2020

Conducted in collaboration with Progate.
Aimed at helping the students with placement and internship preparation. The students were given the Progate platform to learn a new language and receive a certificate of completion for the same. Progate Learning Weekend provided the technical learning to students at free of cost and helped many students to improve their technical skills.

2 WEBINAR ON IEEE & ITS BENEFITS

20TH JULY, 2020

Conducted by IEEE IGDTUW along with eight other SBs in collaboration with IEEE Delhi Section. Focused on benefits offered by IEEE membership: to technical innovation, cutting-edge information, networking opportunities, and exclusive member benefits.

Speaker:

Prof Prerna Gaur-She is currently the Chairperson of IEEE Delhi Section and has also been serving as Branch Counsellor of IEEE NSUT Student Branch since January 2001.

3 HOW TO BAG SOFTWARE INTERNSHIP

27TH JULY, 2020

The speakers shared their experience and valuable tips that could help the students in the placement season.

Speakers:

- Mahima Kataria - B.Tech CSE (Batch 2021), IGDTUW; Interned at SAP Labs
- Satwika Bhattacharjee - B.Tech ECE (Batch 2021), IGDTUW; Interned at SAP Labs

4 HOW TO BAG HARDWARE INTERNSHIP

29TH JULY, 2020

Webinar aimed at guiding the students in bagging an internship at a reputed hardware company. The speakers shared their experience and valuable tips that could help the students in the placement season.

Speakers:

- **Mansi Kesharwani - B.Tech ECE (Batch 2021), IGDTUW**
- **Disha Sharma - B.Tech ECE (Batch 2021), IGDTUW**

5 ACE PLACEMENT INTERVIEWS

1ST AUGUST, 2020

Webinar aimed at guiding students to ace placement interviews.

Speaker:

- **Ms. Ishani Pandey - B.Tech CSE (Batch 2020), IGDTUW; Placed at Microsoft. She gave a talk on placement interviews: the do's and don't as well as the traits & mannerisms required in corporate world.**

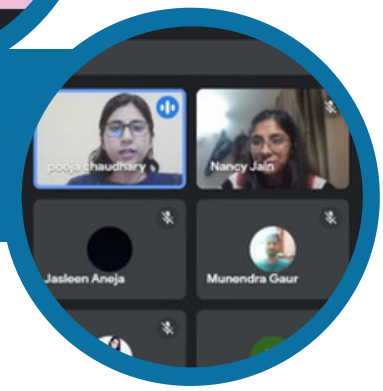
6 CAREER ENHANCEMENT THROUGH PROJECT BASED LEARNING

8TH AUGUST, 2020

Organised in collaboration with 7 other student branches: IEEE HMRITM, IEEE WIE MAIT, IEEE BKBIET, IEEE ADGITM, IEEE MRU, IEEE BPIT and IEEE GTBIT. The webinar aimed at giving an insight into how one's career can be enhanced by following a project based and practical knowledge-based learning.

Speakers:

- **Ms. Mehak Azeem - IEEE Region10 SAC Member, Social Media Coordinator, IEEE Region10 Collabratec Coordinator, Undergraduate Researcher, World's SDGs Regional Advocate, IEEE Brand Ambassador, IEEE HAC Subcommittee Member, Microsoft Office Specialist.**
- **Mr. Ramneek Kalra - Project Engineer at Wipro India IEEE Computer Society Member Obama Foundation Member Co-chair at DSBC 1.0 IEEE Impact Creator Young Professional IEEE Brand Ambassador ISV PDC Reviewer.**



7 THE CAT PREPARATION GUIDE

24TH AUGUST, 2020

An interactive webinar that covered resume building, job interview preparation and CAT preparation.

Speaker:

- **Ms. Pooja Goel - PGP student at IIM Kohzikode (2020-2021). She was selected at IIM Indore in 2018 while studying in college and is an ex-associate engineer at Eaton. She is an IGDTUW alumni.**

8 WEBINAR: 'DEMYSTIFYING THE CYBER POWER CAREER'

28TH AUGUST, 2020

In association with ANOACADEMY, a career-oriented webinar on 'Demystifying the Cyber Power Career' covering interaction with real world hackers, live hacking demo, information about explosive career opportunities in cybersecurity & the essentials of NETIQUETTES.

Speaker:

- **Dr. Ramesh Singh - An Alumnus of IIT Delhi and Kharagpur, scientist at DRDO& a visiting faculty at IIT Delhi & DTU.**

9 LEARN WITH INNERVE - UPSKILLING ECE

12TH SEPTEMBER, 2020

In collaboration with Innerve'20, an ECE - Career and Industry session. Topics covered: the skills required for ECE core placements, how to upgrade your skills, on campus & off campus training opportunities & how IEEE shapes you as a professional.

Speakers:

- **Ms. Aditi Chhabra - Vice-Chairperson, YP Affinity Group, IEEE Delhi Section; Incoming Graduate Engineer Trainee, Mahindra & Mahindra Ltd. and IGDTUW Batch 2020 Alumnus.**

10 WEBINAR: 'BECOME YOUR OWN BOSS'

29TH SEPTEMBER, 2020

Ms. Avishi Goyal and Ms. Kirtika Malhotra - MCA Students of IGDTUW and Founding Team of the Startup: "PARKING HERO", gave a brief idea of what it takes to start your own company struggles faced along the path & how to overcome them.

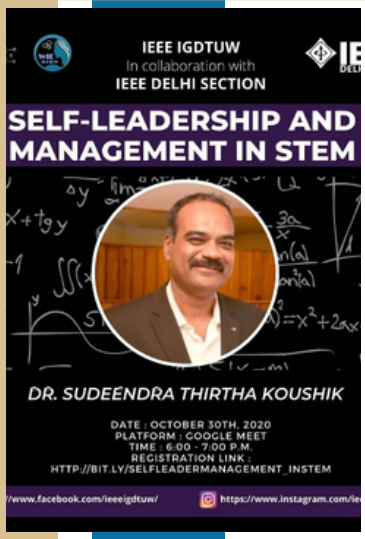
11 GRAPHICON (THEME: VIRTUAL SECURITY)

6TH OCTOBER, 2020

On account of IEEE Day, a Poster Designing Competition was conducted online. The participants were requested to send their entries within the given time frame.

12 'SELF-LEADERSHIP AND MANAGEMENT IN STEM'

30TH OCTOBER, 2020



In collaboration with IEEE Delhi Section Student Network, organised this session to elucidate the right approach needed for making a foothold in STEM fields.

Speaker:

Dr. Sudeendra Thirtha Koushik - PhD in innovation, an accomplished innovator, TEDx Speaker, Entrepreneur & Keynote speaker. A practicing innovator & technology management professional, is the chief Innovator , Co-founder of PRASU while being a part of ExCom IEEE Bangalore, Co-Chair IEEE Ad-hoc Committee, Co-Chair IEEE SYWL Congress Asia Pacific 2016 & Director of Founder Institute Bangalore. He was also mentioned as the R10 personalities of the month, October in their monthly newsletter.

13 WIE TALK ON RESEARCH PAPER WRITING

5TH DECEMBER, 2020

The WIE Talk briefed the attendees about the process of publishing a research paper along with some useful tips.

Speaker:

Ms. Pearl Pullan - IGDTUW Alumnus, has published three undergraduate research papers with IEEE & the WIE Chairperson, IEEE IGDTUW in 2018-19.Now a full-time graduate engineer at Ericsson.

14 VIRTUAL SCAVENGER HUNT AND FRESHERS' WELCOMING SESSION

25TH DECEMBER, 2020

A Freshers' Welcoming Session along with a fun activity, Virtual Scavenger Hunt, theme for the same was Christmas. Participants were given a minute to search & show the item given to them. The top 3 fastest participants were given points.

1 WEBINAR: 'DRONES FOR SOCIAL IMPACT'

10TH FEBRUARY, 2021

An interesting and informative session on 'Drones for social impact'.

Speaker:

Dr. Ruchi Saxena - Founder and Director of Aerobatics, a social impact consultancy firm, worked as a system consultant for over 1.5 decades & is currently working on high-impact healthcare & disaster risk reduction project, enabling Human-centered Unmanned Aerial Ecosystems for Development and Impact along with leading India Flying labs, dedicated to the use of drones.

2 MOMENTUM 2.0

FEBRUARY - MARCH, 2021

A month-long mentoring program. It's an initiative to bridge the gap between hierarchical study levels in our system. Aiming to bring experienced seniors closer to juniors helping everyone grow together.

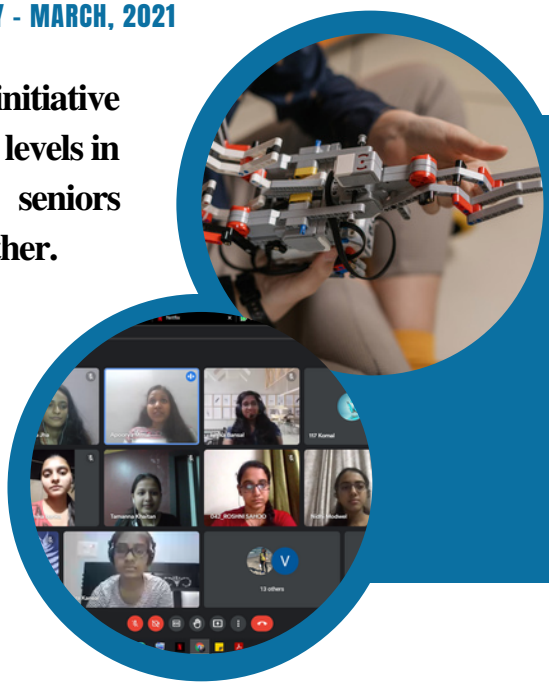
The Tech circles are as follows:

1. iOS App Development

2. Data Structure and algorithms

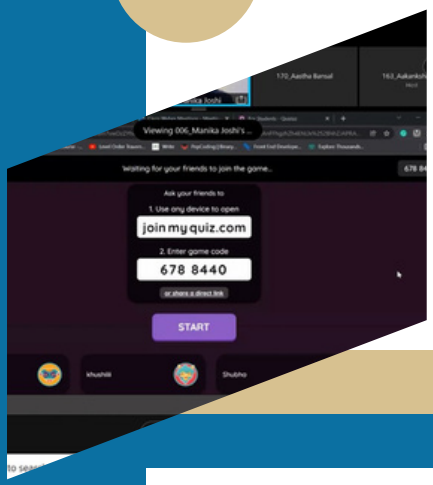
3. Robotics

4. Alexa Skill Development



3 SOCIAL OUTREACH WEBINAR ON EARTH HOUR 2021

18TH MARCH, 2021



In association with WWF-India. A social outreach webinar on Earth Hour 2021, aimed at creating awareness on Earth Hour followed by a fun quiz. It also discussed programs & strategies adopted by WWF-India to encourage participation in Earth Hour'21.

Speaker:

Ms. Shreya Rastogi - WWF India volunteer

4

‘HOW TO BUILD THE FASTEST TRACK FOR A GLOBAL CAREER IN CYBER DEFENCE’

26TH MARCH, 2021

IEEE IGDTUW and LeanIn IGDTUW, in association with WhizHack Technologies Pvt. Ltd., organized a webinar on "How to build the fastest track for a Global Career in Cyber Defence”.
It covered aspects of Cybersecurity, career opportunities & India’s only Dual Certificate Program by IIT Jodhpur & bin Israel.

Expert Panelist: Prof. Sumitra Sandhya, Associate Professor, Dett of Computer Science, IIT Jodhpur
Presenter: Kaushik Ray, COO, WhizHack Technologies Pvt. Ltd.

5

IEEE WEEK 5.0

30TH MARCH - 2ND APRIL, 2021

'HOW TO BAG HARDWARE PLACEMENTS'

SPEAKER: MS. DISHA SHARMA

'HOW TO BAG OFF-CAMPUS PLACEMENTS'

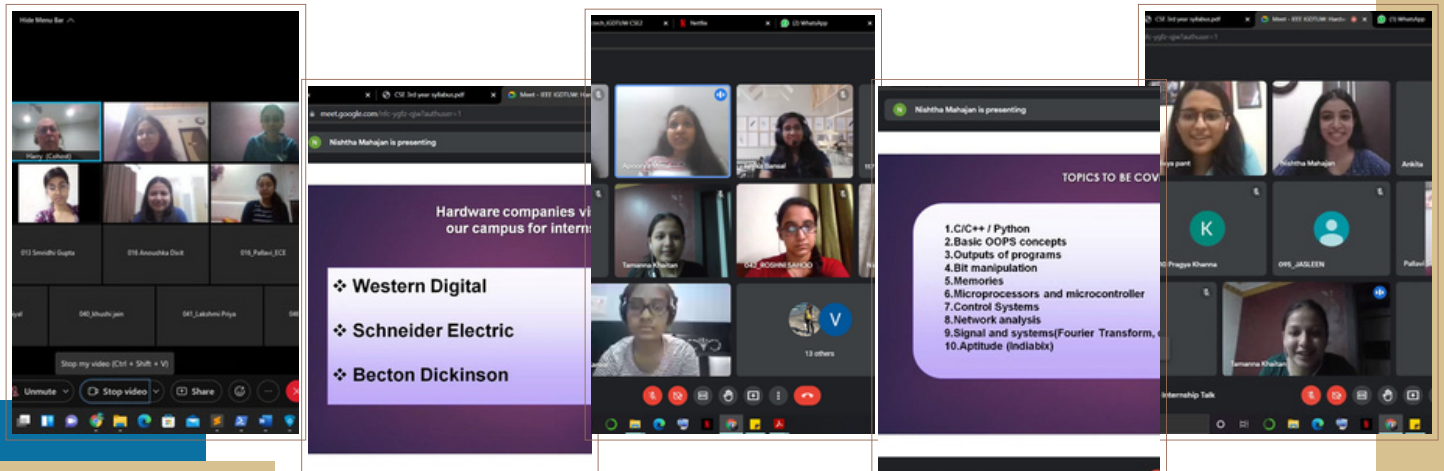
SPEAKERS: MS. SHALINI JHA & MS. SHEFALI KUJUR

‘HOW TO BAG NON-TECH PLACEMENTS’

SPEAKERS: MS. SAKSHI SHREYA &MS. SUNIDHI MITTAL

‘HOW TO BAG SOFTWARE PLACEMENTS’

SPEAKERS: MS. PRATEEKSHA GUPTA, MS. SATWIKA BHATTACHARJEE & MS. MANSI KESHARWANI



6

WIEMPOWER 3.0

10TH - 18TH APRIL, 2021

IEEE IGDTUW organized the 3rd edition of its flagship event, WIEmpower 3.0, in collaboration with IEEE Delhi Section Student Network.

WIEmpower 3.0 comes with vision to provide a platform to aspiring Women in Tech to boost their confidence & inspire them to follow their academic interests to career in STEM & Entrepreneurship through various events & motivational talks, aiming to increase awareness amongst everyone regarding Women in Tech & was conducted on 2 weekends (10th-11th April, 2021 and 17th-18th April, 2021) in online mode.

COMPETITIONS

WIEGNITE HACKATHON

CODE-O-FIESTA 2.0

WEBINARS

"HOW TO PURSUE CAREER IN INDIAN AIR FORCE"

SPEAKER: MS. MAITRAYI NIGAM

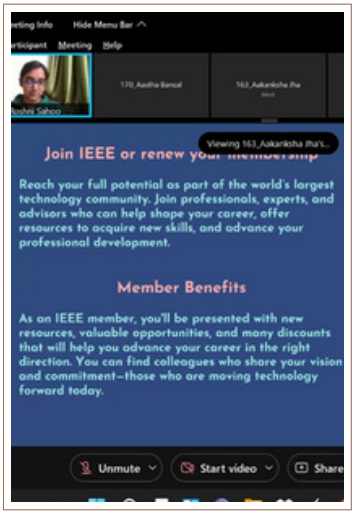
"HOW TO BALANCE CAREER WITH FAMILY LIFE"

SPEAKER: DR. JASDEEP KAUR DHANOA

7 IEEE DELHI SECTION MEMBERSHIP DEVELOPMENT WEBINAR

19TH JUNE,2021

IEEE Delhi section along with IEEE IGDTUW Student Branch welcomed everyone to an enlightening session on IEEE Delhi Section Membership Development Webinar with our esteemed speakers.



Speakers :

- **Prof. Prerna Gaur - Resource Person for Webinar**
- **Prof. Rachna Garg - Chairperson, IEEE Delhi Section**

Membership Development Committee Members:

- **Dr. Jasdeep Kaur Dhanoa- Chairperson**
- **Dr. Mahesh Bundele- Rajasthan Region**
- **Dr. Parul Agarwal- Delhi Region**
- **Dr. Rajesh Pindoriya- Himachal Pradesh Region**
- **Prof. Ankur Gupta – Jammu Region**
- **Dr. Shruti Jain- Himachal Region**

8 KARGIL VIJAY DIWAS CELEBRATION

26TH JULY, 2021

On the auspicious occasion of ' Kargil Vijay Diwas' IEEE IGDTUW organised a meet up to celebrate the unforgettable victory of India.

Chief Guest - Prof. Col. K. C. Tiwari

9 IEEE MEMBERSHIP DRIVE AND ORIENTATION

7TH AUGUST, 2021

At IEEE IGDTUW Student Chapter, we try to foster technological innovation and excellence for the benefit of the student community.
With the same spirit, we welcomed our new batch to take the first step towards an amazing journey.

10 INDUSTRY-ACADEMIA COLLABORATION WITH FOCUS ON RESEARCH & INNOVATION

25TH SEPTEMBER, 2021

Industrial Relations Committee, IEEE Delhi Section, leagued with the IEEE Kolkata Section, IEEE UP Section & IEEE Communication Society to organise an extremely prolific R10 IRC theme sponsored extravaganza - "Industry-Academia Collaboration With Focus on Research & Innovation" which aimed to append the research knowledge & bridge the gap between academia & practical understanding.

Workshop Theme:

- **Innovations around Applied New age Digital Technologies.**

Key Note Speakers:

- **Dr. P. Nagabhushan- Director, IIIT, Allahabad**
- **Dr. Aloknath De- SVP& CTO, Samsung R&D India**

Panel Discussion:

- **Dr. V. Ram Gopal Rao-Director, IIIT Delhi**

Success Stories:

- **Dr. Vijendran G. Venkoparao – Head, Center of Technology Startegy and Innovation, Robert Bosch Banglore**
- **Dr. Preeti Bajaj- Vice Chancellor. Galgotias University, Greater Noida**

11 WIE TALK ON RESEARCH PAPER WRITING

24TH SEPTEMBER,2021

A tech - talk, with Ms. Satwika Bhattacharjee as the esteemed speaker, on getting started with research, research paper writing & corresponding opportunities.

Success Stories:

- **Satwika Bhattacharjee - alumna of IEEE IGDTUW, employed as engineering analyst at Goldman Sachs, began her journey with ETI labs as a research & development intern. Also been part of numerous projects & accumulated several awards.**

12 'GETTING STARTED WITH OPEN SOURCE'

25TH SEPTEMBER, 2021

The speakers joined us live to share their personal experience & talk about how to lay down a strong foundation in the vast world of open source.

Speaker:

- **Vani Chitkara : A 3rd year ECE student at IGDTUW, lead for Google Developer Student Clubs, IGDTUW ,Outreachy '21 intern at Open Archive along with being a vGHC '21 scholar & has been awarded MLH award for Best Beginner Hack in Delhi Hacks Hackathon,2020.**
- **Kapil Bansal: A 4th year CSE student & an open source enthusiast. A GSOC'21 student at OpenWisp & is a python developer skilled in Django, Data Science, Web Application Security &many more.**

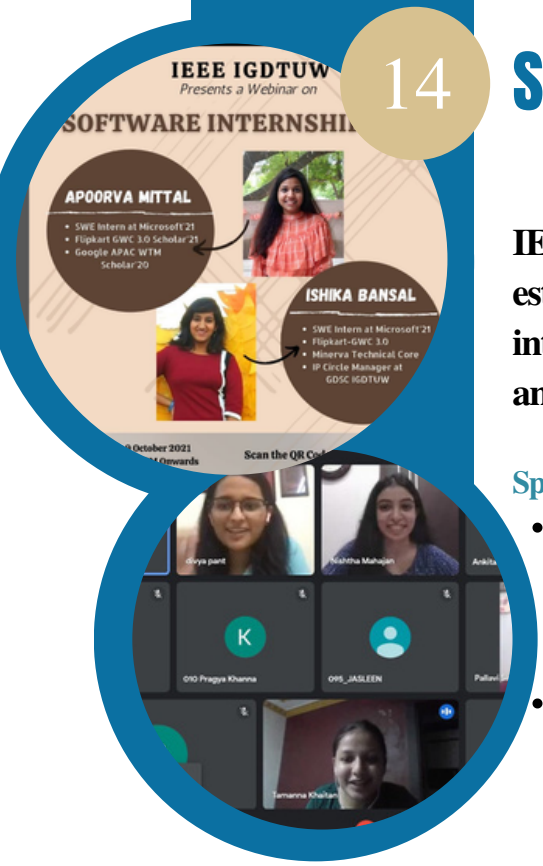
13 HARDWARE INTERNSHIP TALK

7TH OCTOBER,2021

IEEE IGDTUW orgainsed the session on- "Hardware Internship Talk", wherein our esteemed speakers shared their experiences along with providing surefire tips & tricks for upcoming internship season, followed by a live QnA session.

Speakers:

- **Divya Pant: former WIE Vice Chair at IEEE IGDTUW, 2020-21 & a final year B.Tech ECE student, ex R&D intern, Schneider Electric, ex president Lean in IGDTUW.**
- **Nishtha Mahajan: B.Tech ECE grad. IGDTUW, former publication head at IEEE IGDTUW, Prof. Shail Bala Jain Motivational Scholar awardee for First Rank in ECE Branch for 2020-2021, Management Head at Training and Placement cell, IGDTUW. Graphic Designer, IEEE Young Professionals, Affinity Group, Delhi Section & has interned with Western Digital as a Firmware Development Summer'21 Intern.**



14

SOFTWARE INTERNSHIP TALK

9TH OCTOBER, 2021

IEEE IGDTUW presented "Software Internship Talk", with our esteemed speakers, wherein the attendees got to know about coveted internship opportunities in the software industry, interview hacks and much more!

Speakers:

- **Apoorva Mittal : A final year BTech CSE student at IGDTUW, Microsoft SWE intern and is a Flipkart GWC 3.0 scholar along with being the recipient of Google APAC Women Techmakers Scholarship 2020.Also a GHC '21 scholar.**
- **Ishika Bansal:A final year B.Tech. CSE student at IGDTUW, former SWE intern at Microsoft along with being a Flipkart GWC 3.0 scholar, IP circle manager, GDSC IGDTUW & Web Development mentor, Lean In IGDTUW.**

15

INTRODUCTION TO OPEN SOURCE AND HACKTOBER FEST 2021

11TH OCTOBER,2021

Bringing the zeal of innovation to the forefront, IEEE IGDTUW in collaboration with Lean In IGDTUW, presented an all-in-one immersive session to get you kickstarted in the world of Open Source.
Many joined us for a hands-on session on open source along with a walkthrough of Hacktoberfest '21, a month-long celebration of open source software run by DigitalOcean.

Speaker:

- **Unnati Chhabra :A pre-final year student, IGDTUW, founder of CodXCrypt Community, also a mentor-Open Source Day'21, an event organised by AnitaBOrg & currently a LFX mentee at Open Horizon**
- **Kapil Bansal: A final year CSE student & GSoC'21 student at Open Wisp, volunteer at AnitaB-org as an OS leader & an advocate of Open Source development.**

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INDUSTRY-ACADEMIA COLLABORATION WITH FOCUS ON RESEARCH & INNOVATION

25TH SEPTEMBER, 2021

Industrial Relations Committee, IEEE Delhi Section set forth the next step to R10 IRC sponsored theme workshop entitled "Industry-Academia Collaboration focusing on Research & Innovation", emphasizing towards 'Innovations around Power & Energy Sector' helping in analyzing barriers & new opportunities, bridging the gap between academia & practical understanding.

Collaborated with the IEEE Kolkata Section, IEEE UP Section, and IEEE ComSoc, PES-IAS, PELS-IES Delhi Chapters and Consultants Network AG Delhi Section.

Keynote Speaker:

- **Dr. Pankaj Mittal - Secretary general Association of Indian Universities**

Panel Discussion:

- **Sanjay Kar Chowdhary - Immediate Past Chair, IEEE Kolkata Section, CESC Kolkata**

Success Stories:

- **Narayanan Rajagopal - Senior Scientist, Research and Innovation wing, Tata Consultancy Services Ltd.**

17

PERSONAL BRANDING

15TH NOVEMBER, 2021

A personal brand is the unique combination of skills and experiences that make you who you are. It is how you present yourself to the world. You don't need to be Oprah Winfrey/Richard Branson to have a great personal brand.

But developing a great personal brand doesn't happen overnight, so to set you on the right track, IEEE IGDTUW presented a talk on "Personal Branding".

Speaker:

- **Mr. Sandeep Kochhar: An alumnus from IIM Bangalore, an Electronics & Telecommunication Engineer (more than 18 years of Corporate Consulting experience) & over 30 years of experience in Story Telling, Poetry & Creative Writing. Was also awarded with the title of LinkedIn Top Voice India 2019**

18

IEEE WEEK 6.0

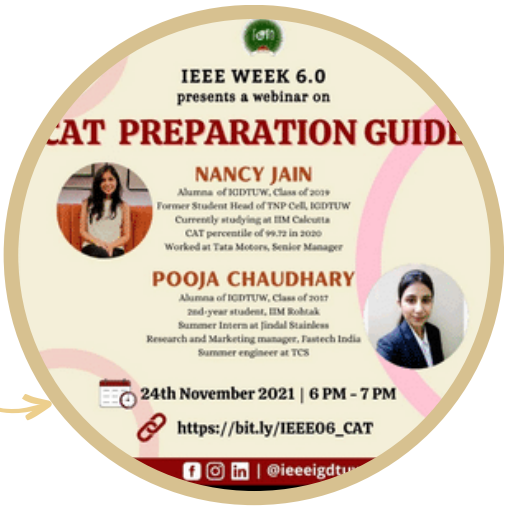
23RD - 28TH NOVEMBER, 2021

AI-ML WORKSHOP

SPEAKER:
MR. ATMA KUMAR RAI

CRISIS OR OPPORTUNITY WEBINAR

SPEAKER: MR. HARRY FOSTER



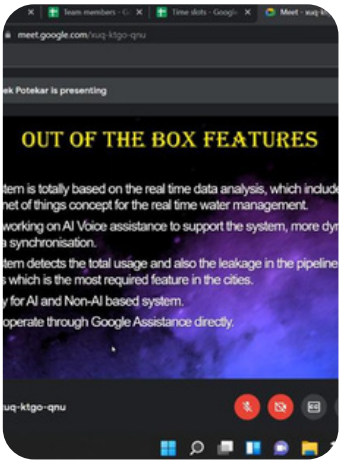
CAT PREPARATION GUIDE SESSION

SPEAKER:
POOJA CHAUDHARY & NANCY JAIN

LET'S SECURE IOT WEBINAR

SPEAKER: MR. PREET YADAV

IDEATHON



EVENTS 2022

1 CODE-A-THON

16TH JANUARY, 2022

Organised in collaboration with Coding_like_a_pro.fun_zone and Clap.nsut.

A coding competition that provided the students the opportunity to develop the skills to solve day-to-day life problems through coding and compete with fellow mates.

2 WEBINAR: 'CYBER SECURITY AND ETHICAL HACKING'

30TH JANUARY, 2022

IEEE IGDTUW organised a webinar in association with Clap.nsut and Coding_like_a_pro.fun_zone . The topic of the webinar was 'Cyber Security and Ethical Hacking'. In this rapid technological world, discussion of these two subjects is very important.

Speaker:

Mr.Swapnil Narayan, Software Engineer at Microsoft.

3 PLACEMENT TALK

6TH FEBRUARY, 2022

In collaboration with Rotaract Club of NSIT Regency hosted a session on "Placement talk" to address the queries related to placements.

Speaker:

- **Ajay Lather- SDE at Amazon and former software engineer at Samsung Electronics.**
- **Kiran B Nambiar- Assistant Manager-Operations at Runaya, placed in ICE Core.**
- **Mrinal Verma-Currently an Associate at Quantira and former Senior Analyst at Indxx.**

Shark Tank - The IGDTUW Edition

with Apurva Chawla

Back in 2017, when I was graduating from IGDTUW, I chose an unconventional career path. I have always been intrigued by entrepreneurship, and startups and I wanted to do something of my own someday. But, I hardly found an ecosystem back then that I could reach out to for support or guidance. Theory doesn't teach anything about real-world business, just like it doesn't teach you much about building world-class tech products. Yet, somehow, I found my way and realized what really excited me - it was the feeling of contributing to something that could potentially change the world in some way and while I learned a few things about startups and investments by hit and trial, I'd like to share a few insights with you that could make things a little easier for some of you out there.

For the uninitiated, most startups need funding. And they need lots of it during their journey. This funding comes from various sources - sometimes individuals (Angel Investors), and other times from managed institutions (VC Firms, Private Equity Firms, Rich guys' Family Offices). I work with a VC firm that invests in early-stage startups, when they may not even have a fully functional product. So anything that I share from this point onwards would be from that perspective.

If you're reading this, I'd like for you to pause and think - what are some of the prominent startups you know of ? Which startups really excite you? You may think of companies like Slice, BYJUs, Unacademy, Zomato, and Swiggy. And those are some of the few startups that impacted our lives a lot. But would you call these startups successful? Well, that depends.

Success in the startup world is a very qualitative metric. It can mean different things for different people, depending on who you ask. Did those founders make a lot of money? Yes, they did make some money. Did they change the way people live? Yes, definitely. Did the business make money? No. These businesses are still loss-making, even after years of existence. If these businesses never make a profit, will they continue to exist? Maybe, depending on if they still have a vision of making profits. So will these companies shut down? Maybe.

> ***If you ask me what is a great business - I like to think that it's the one that outlasts us.***

A business has to be a legacy, similar to a well-oiled machinery, that runs with or without the founder, generates profit, and makes lives better for every stakeholder and ofcourse, the target consumers of the said service/product.

How many such businesses exist today? Few.
Does that mean that you have to generate profits from Day 1 or year 1? Absolutely not. The best legacy businesses of today's modern world were built after years of losses. Look at Amazon, Facebook, and Google.

> ***What problem should you choose to solve?***
> ***Well, that's the right question to ask.***

There are tons of problems that exist today, some much bigger than others. The easiest way to figure out what problem to solve will be by observing your surroundings. You study in college. Is there a gap that you see between what you study in books and what you actually will do in a job? You travel by metro, can your commute experience be better? You like to code, are there enough avenues for you to compete with others and get better at it?
Whatever problem you pick, the most important thing with that is to go as deep as you can to understand that problem - how many people face that problem? How frequently? Have they found a way to work around it? Is that solution good enough? Is that problem a painful enough problem that should get solved or is it just something that annoys people a little but not enough to do anything about it?

When you have finally arrived at a problem to solve, you start thinking about the potential of your startup. How many lives will your startup impact? This realization is very crucial. In my experience, the best of the founders have failed at this decision. Because sometimes, people pick a problem that doesn't have a huge market potential. It's not the worst thing though. In my opinion, every problem is actually worth solving, even if it impacts only a few. It may not be a large enough business, but it can be very satisfying for the founders knowing that they impacted lives. But if your aim is to get lots of VC funding, become a unicorn business, and build large revenues, you should pick a large market.

> ***Market = No. Of people who would be willing to pay for your solution x Amount that they will pay per year for that solution.***

Being a founder isn't easy. I have interacted with hundreds of founders now and one sentiment definitely echoes among all of them, that it's a very lonely journey. You are going through a lot every day, and only you'd know how you're surviving different battles every day. It's a huge financial risk too. You leave the prospect of a well-paying job and secure monthly income for your startup with no sense of when you'll draw your next salary. It's daunting at best. But the only thing that makes each founder take that plunge is their belief in themselves that they can solve a problem and come out of this experience stronger. The skills that you learn as a founder are very unique, yet nothing that you can apply fully to your next job. You do literally everything, from HR, and accounting to coding and marketing. The most important thing this experience may teach you is how to figure stuff out when you come across a challenge. You just get better at fighting fires calmly.

When I was in college, I didn't know who to reach out to, and I didn't have the right resources to follow an entrepreneurial path. But, today, it's a different world. You're much more connected, and you have a few alumni working at startups or in VCs. My advice to budding entrepreneurs at IGDTUW would be to work on yourself first and read some things outside of your domain that will give you different perspectives. And, when you feel ready to take on this world and jump head-first into the world of entrepreneurs - Just Do It! Don't wait for the right time, because there isn't one. If anything, the best time to startup is when you're young and have less responsibilities. It is not an easy journey at all, you will fail and rise multiple times, but you're going to come out of it much stronger.

ABOUT THE AUTHOR

Apurva is a graduate of IGDTUW (CSE, Batch 2013-17). While at college, she took charge of various activities - founded the Entrepreneurship Development Cell, and became a core team member in Taarangana. She went on to pursue her interest in startups and chose a unique career in Venture Capital. Today, she works with one of India's most prominent VC firms called India Quotient as a Senior Investment Associate.

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An Insider View in The Life of a MS Graduate

> *Consistency and adaptability are two factors that become an integral part of the psyche of an international immigrant student.*

with Pearl Pullan

American sitcoms have spoiled us for good! Many aspiring students believe that life in the United States is a bed of roses which it isn't. But, indeed, it is definitely worth all the sacrifices and hard work.

Talking about my journey, I always knew at some point I wanted to pursue higher education abroad. Choosing the US was a personal preference. Although Europe is a popular choice among students as well, when it comes to higher education, because of the equally lucrative and in some cases, even better opportunities with comparatively lower expenses, than the States.

The lockdown as an aspiring MS student was not easy, but it is as the saying goes - what doesn't break you makes you stronger. The pandemic brought with itself many uncertainties and more so for international students. I had days and nights when I would just stare at the white wall in front of me with a blank mind only to break into tears a few moments later. I was okay but never content with how my days went even though, in hindsight, I was always grateful for having a roof over my head and food on my plate.

Something that helped me personally when I started my journey abroad included having faith in the process, owning the fact that everyone's journey is different, expanding my knowledge constantly and trying to incorporate a growth mindset.

Even though the journey of a MS student in the US isn't all that easy as some make it out to be. It can definitely be an enriching one if you plan things beforehand. Some factors that you might want to consider when you are preparing to come to the States are related to coursework and the profile you want to build for yourself. I have explained few factors revolving around the same below:

- **Coursework:** Choose professors and courses wisely. Talk to seniors who are in the same career path as you. Some subjects are mandatory while others are electives from which you can choose from. Each course has credit hours associated with them. You will be assigned to an advisor who can assist you in managing how to best go about them.

- **Projects:** Most courses/subjects have a project component in them. But along with that, do projects relevant to the role you are hoping to apply for later on. If you don't have any prior work experience then undertaking projects related to that field is a great way to learn and also makes up for content to speak about in interviews.

- **Professors:** See their research work, how they grade, how they teach, how they maintain relationships with their students and choose to attend their classes, accordingly

- **Groups:** Group projects are the way to go, but if you have a choice in building your own group - create groups with people who have similar goals but varied backgrounds and can stay consistent with their work

- **Audit courses:** You can take courses which don't reflect on your mark sheet and for which you don't have to do the assignment for either. These can eventually help you gain news skills and additional knowledge without the overhead of assignments.

Another important facet of living in the United States are finances. You can initially apply for an education loan but it can get tedious to not only pay it off but manage your personal expenses while you are at it. Often to tackle this issue, many students apply for on-campus jobs that range from IT Support, Security officers, student support, Gym attendees to name a few. All these can be applied for from the University portal.

Image source: https://www.istockphoto.com/photos/international-students

Other include RA (Research Assistant) wherein you work alongside professors with their undergoing research or TA Teaching Assistant wherein you help professors with coursework, grading and provide assistance to students with any doubts they may have related to a particular subject. The best way to get these roles is to mail professors and build a rapport. I haven't had a chance to do this myself, but from what I've heard from my peers, here at the university connecting with professors 1:1 is what works best to land such roles. Also, another informational nugget - if you are a graduate student, especially, you can apply for TA roles for undergrad courses and have a somewhat higher chance of landing the role. But beware, that there is a restriction on how many hours you can work alongside your coursework so make sure that the on-campus job you plan to take up is in compliance with university policy and doesn't violate the total number of hours you are allowed to work.

> ***Students also tend to manage finances while increasing their chances to land a job straight out of college, which might also help you stay in the States longer and get adequate work experience, through internships.***

For internship applications, particularly, the strategy is quite simple. Categorize the type of role you feel your profile is most aligned with and shortlist at least 2-3 roles you want to apply to. Try to build genuine connections with people in the industry who held these roles prior to you and leverage these connections to the best of your capacity. Although, don't just focus on getting referrals but also prioritize understanding how they grew over time and try to implement the same in your journey. Create 2-3 resumes altered and customized for each of these roles and get it reviewed multiple times.

> ***Remember, resumes being shortlisted is a game of probability but again quality beats quantity so strike a balance!***

Suffice to say, I had many learnings as a foreign immigrant, most of which I feel are extremely vital for other aspiring students who plan to come to the States. Some other learnings of mine, which are more behavioural in nature, are listed as below -

- People value connections. They will never forget how you made them feel. So treat them with respect.
- Be brief yet give a personal touch to every conversation
- People trust what you say and your value is in keeping up with it
- You would have to cook, clean, complete assignments, work part time jobs and search for job opportunities all by yourself. So surround yourself with people who add value to your life and let them know you are grateful for them.

Studying in the States is as much of a holistic experience as you want it to be. Make the best out of your time here. Every second you spend on building your career is precious. You've got a long race to run, so buckle up, keep the momentum but also remember to take care of yourself along the way.
And, most of all, have faith in yourself and in the fact that you will land exactly where you are meant to be!

ABOUT THE AUTHOR

I Pearl Pullan graduated with a Bachelors in Technology from IGDTUW in the year of 2020. She is currently a graduate student at Northeastern University, Boston where she is pursuing Masters of Science in Engineering Management with a major in Product Management and a minor in Data Analytics. She was recently accepted as an Product Manager Intern at Samsung Research America where she is working to improve Bixby (Samsung's A.I. conversational assistant) for better user experience. She has 1.5 years of professional experience at Ericsson in India as well.

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The Hype about Blockchain

with Ishita Bhardwaj

Do you know the feeling when you see something pop-up on your Twitter feed again and again? It can be a new hashtag, a new fad, whatever you want to call it. I'll call it a hype. But when does a hype become a revolution?

> *"The word "blockchain" has been floating around in the domain of tech, finance and business for over a decade."*

The seed was planted about 30 years ago when Stuart Haber and W. Scott Stornetta first published their papers on "A secure timestamping mechanism" that included a cryptographically secured chain of blocks. Later in 2009, Satoshi Nakamoto, known for being the creator of Bitcoin, cited three of their published papers in a Bitcoin Whitepaper. And that boosted the use of the word blockchain in the industry.
But, what exactly is a blockchain? Well, the term talks for itself! It's a chain of blocks. It all started with the security and decentralization of data. A Blockchain in today's time is a digital ledger; in simple words, a database that stores any kind of data in a more secure and decentralized way. Rather than the data being stored in one place (centralized), the blockchain distributes a copy of the data to an entire network (decentralized) which makes it very difficult to hack or cheat the system. The network consists of nodes, in this case, it will be your computers.

Now, how the block is created is the reason for the high security of the system. When new information is added to the system, multiple nodes must verify and confirm the legitimacy of the new data before it can be added to the chain. In the case of cryptocurrencies, it might involve verifying if the coins had been spent or not. This is different from a centralized database, where one person can make changes without verifying them.

Once there is consensus, the block is added to the chain and the data is recorded in the distributed ledger (i.e. the block). The blocks are securely linked together, forming a digital chain from the beginning (genesis block) to the present. And once the block is added, the action can't be reversed.

> *"So, the data which is added to the blockchain remains in the blockchain forever."*

The data is typically secured using cryptography, that is, the nodes need to solve complex mathematical equations to process data. It is at this stage that the multiple nodes which verified the legitimacy of the new data, are rewarded with the blockchain's native currency.

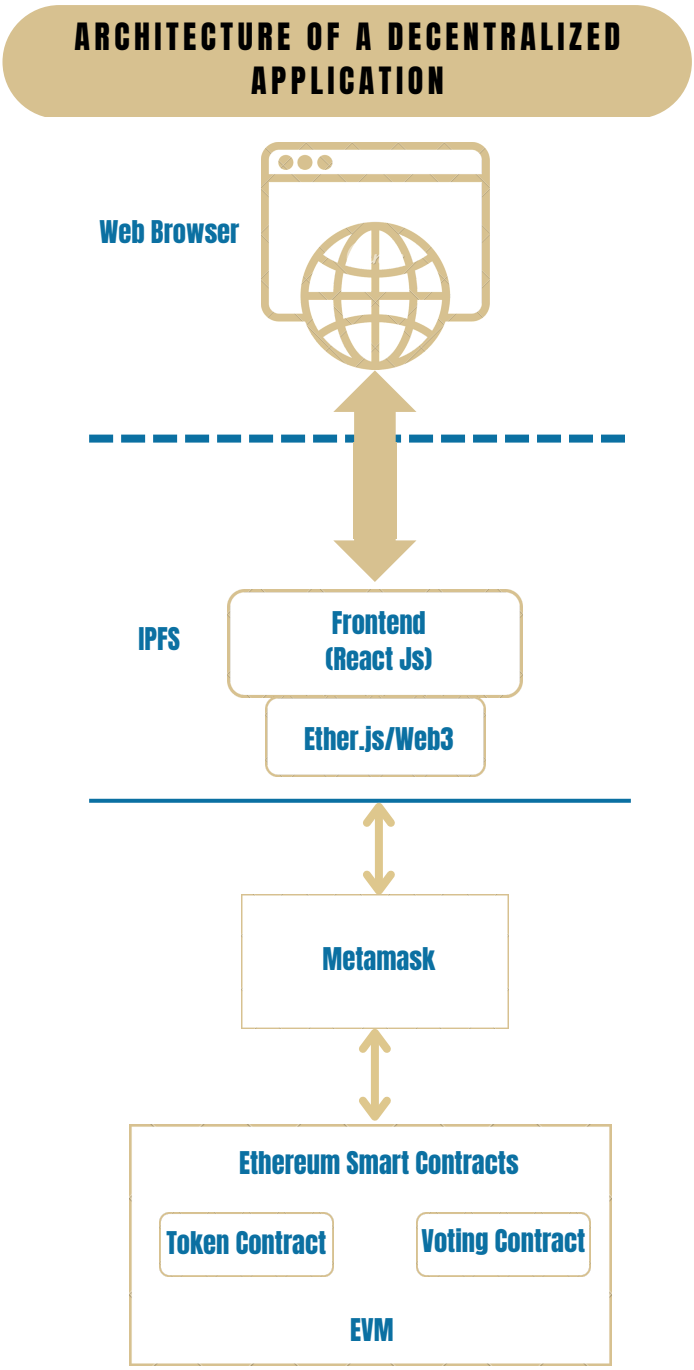
Also, the data which can be stored in the blockchain can be anything from digital currencies, contracts to funding etc, which is why this technology offers the potential to serve a very wide range of applications. From decentralized finance (DeFi), decentralized Applications (DApp), Proof of ownership (NFT), Decentralized Autonomous Organization (DAO) and Metaverse, among others .

This is where the evolution begins. The scope and potential of what Web 3.0 can be, is much bigger than what can be imagined right now. Web 3.0 provides new opportunities to monetize using "to-earn" models like learn-to-earn, judge-to-earn (DAO), create-to-earn etc. Web 3.0 gaming provides a play-to-earn model, which can be converted into a chance to earn any form of game assets that can be transferred to the real world. Currently, a major focus has been put on the "fast money making" part of the technology, which does not do justice to it all.

It's very common for humankind to look at something which doesn't exist as, well, impossible. What blockchain is today, the Internet was in the 1960s. So naturally, Web3 space holds a lot of potential with this sector offering many problems to solve but very few people who know how to solve them. And this imbalance of supply creates a large need for engineers with the required skill set which is why if you want to try your hand at something new, want to change your career, explore a different space, work with people from different walks of life and earn money, a blockchain engineer can be a very lucrative career option for you. The people supporting the web3 space and funding the projects are some top hierarchy leaders in the world. From angel investors like Elon Musk, Balaji Srinivasan, Tanmay Bhat, and Preethi Kasireddy to companies like Coinbase, NFX, and Alchemy are funding millions of dollars to startups. Recently, Facebook changed their name to Meta, which conveyed its next big project in the Metaverse domain. Companies like Microsoft, IBM, Deloitte, and Adobe are working on their own blockchain projects. The list is endless, and so is the scope.

Image source: https://medium.com/the-capital/the-web-3-0-economy-a72a7944cee1

The basic architecture of a decentralized Application looks something like what it shown in the image beside.



Smart contracts are coded on the Ethereum Virtual Machine or any other Non-EVM Chain.
To connect the frontend to the smart contracts for transactions and act like your identity, a signer/provider is used, like Metamask, Solana wallet etc.
The front end of the application is made using ReactJS with Ether.js being one of the modules used to interconnect the frontend and backend logic.
Developer Environments like Hardhat or Alchemy are used to deploy the application on the blockchain.

On a blockchain, any activity on the main net leads to the spending of some amount of gas fee (Ether or a smaller denomination; Wei). So to test your application, developers deploy their application on the test net and use fake ether to run their application. Some test networks on Ethereum are Ropsten, Rinkeby etc.
For the efficient working of the application, multiple tech stacks are created every day. Given below is the web stack currently in use for a Web 3 application.

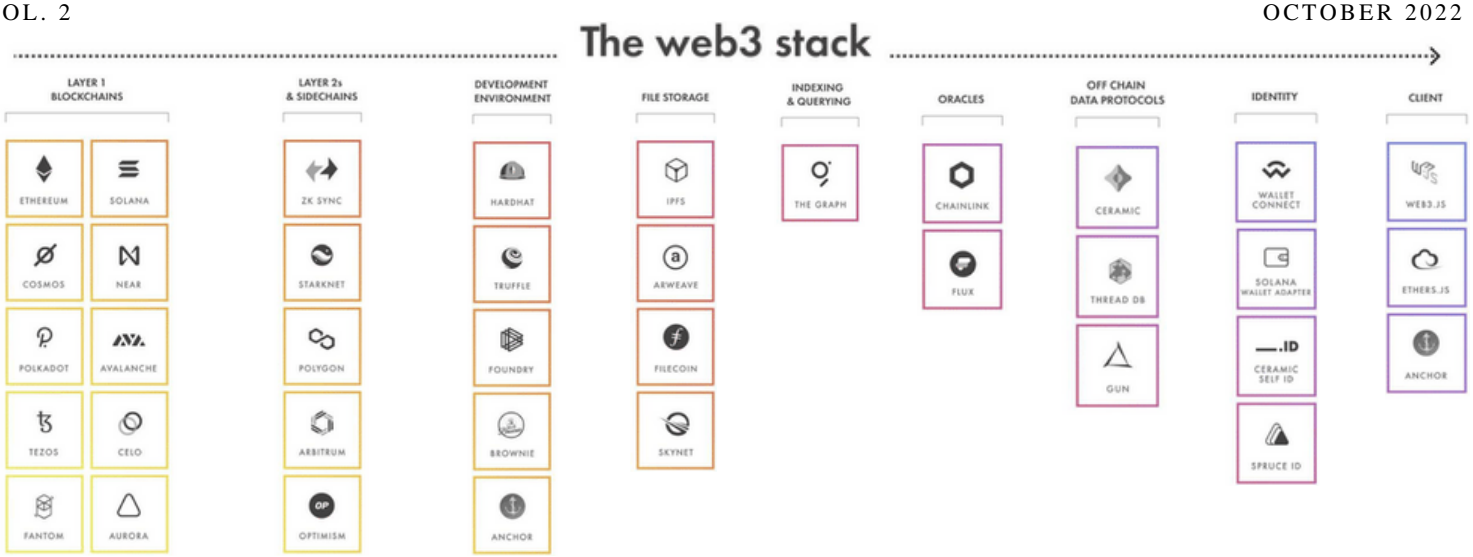


Image source: https://dev.to/edge-and-node/the-complete-guide-to-full-stack-web3-development-4g74

As Web 3 is still a new space and mostly unexplored, there are very few good resources to refer to. But with a like-minded community, you'll find answers to most of your questions. Below are a few resources that I used while learning and building my Dapp -

- Solidity is the most preferred language to write smart contracts with. CryptoZombies provide an interactive platform to learn the basic syntax of the language.
- I started my journey in the blockchain on Ethereum. But today there are many Layer-1 blockchains on which you can build your application. I recommend reading about the architecture of the blockchain to get comfortable with this technology first. I read, 'How does Ethereum work, anyway?' which is a brief of the Ethereum yellow paper, before starting my Bootcamp. You can also find White Papers (marketing document used to persuade potential customers to learn more or use the service or technology), Yellow Papers (technical version of the white paper, must-read for engineers) and Beige Papers (re-formats the yellow paper into a more organized format and is usually easier to understand) on Web3.0 well for enhancing your knowledge. It usually gets difficult to understand these papers if you are not familiar with technical and mathematical jargon. Yet, for the evolving Web 3 community, these are very helpful.
- Organizations like OpenZeppelin have created many commonly used libraries like ERC21(tokens), and ERC721(NFT). These libraries will come in handy while developing your applications. So if you are confused about the logic, do read the contracts on their respective GitHub page since almost every decentralized application will be up on GitHub.
- And to learn how to build your first Dapp, you can follow youtube tutorials and build one simultaneously which is what I did initially as well. DappCamp just provided me with a community to ask my doubts.

> ***Opportunities are always available in the Web 3 space.***

At any web3 company, the positions available range from Solidity engineers (contracts/backend), Frontend developers (react.js), Security engineers (auditing), Unity Developers (gaming), Flutter Developers (android), Researchers to Founding members among others. You don't need to know everything about blockchain in Web3 to start your career in this space. Web3 in itself is changing at a fast pace, and it gets very difficult to keep up with what is the current news. It is like a rabbit hole. Right now, in the community, there are a lot of leaders trying to help developers in making the switch to web3 with programs like Summer of Bitcoin, Tezos Fellowship, Polygon's Fellowship, DappCamp, ChainPeCharcha, Rajeev's Secureum Bootcamp etc. People are willing to give you the job if you have the zeal and some skills to go along with it.

Throughout my college life, I've tried to explore what tech stack most interests me. So when I heard about blockchain, I tried understanding what it is by watching Caleb Curry's video. Soon after, I ended up watching a podcast, thanks to the hype and my curiosity. In the podcast, Akshay BD, Tanmay Bhat and Preethi Kasireddy were talking about how blockchain made them change their point of view about life and traditional systems.

> *Blockchain will shake the whole world not only from the technical point of view but from a philosophical, financial, social and business one too.*

I ended up learning about Preethi Kasireddy's Bootcamp, which is called DappCamp today. I was a part of their first cohort. Initially, I had to fill out an application, and give answers to a few questions like, "Why do I want to be a part of the Bootcamp", "What do I expect from this Bootcamp", etc. Prospective participants were also given a test, which included two questions aiming to showcase that we had basic coding skills and problem-solving capacity. The Bootcamp was priced at $2000 for 7 days which was a lot for a college student like me. But I received a scholarship from Polygon (Matic) alongside 3 other college students from IIT Roorkee, IIIT Hyderabad and IIT Bombay, to be a part of the Bootcamp.

Presently, the DappCamp is 3 weeks long, with a more extensive learning experience compared to what it offered since its inception. It now includes a test and an interview round. The DappCamp cost has also been increased to $3000 per head, but students can apply for scholarships on the official page. Many companies are also willing to sponsor and fund many of these scholarships to give people the opportunity to learn in-demand skills particular to this field. As I said before, if you are willing to learn, opportunities are there to support you.

After the Bootcamp, I wanted to learn about auditing which is why, the next bootcamp I was a part of - Rajeev's Secureum Bootcamp, was the perfect opportunity for me. In parallel, I was also participating in a mentorship program with engineers from Chorus.One, where I explored what I further wanted to do.

> *Blockchain was or never will be just being a hype.*

In the past year, the monetary value of Ether and Bitcoin have sailed through the roof. In January 2022, the crypto market was valued at over USD 2.5 trillion, with more than 12,000 crypto projects under its fold. The problem was that the hype around blockchain evolved as a mode of making money for many people which took the spot-light away from what it truly was supposed to be - the evolution of a new technology. A few months ago the market crashed including a huge fall in the crypto market, which reached an all-time low and led to the disappearance of a large number of people who had invested in this space. Now, what is left with the ruins are the true believers and builders of Web 3.0. In the Web 3 space, the present time is being called the "Winter of Blockchain". The forest is deserted, and the wind is cold and harsh. So, most Web3.0 companies have gone into hibernation. This time is for the true builders to rest, build in silence and wait for the onset of "Crypto Summer". It is believed that "Crypto Summer" is whenever the engineers believe it is "Crypto Summer". The truth is whenever a new technology enters a market, it is inevitable that it will crash the first time around as initial experiments fail more than they succeed. But, in my view, the progression of Web 3 is inevitable, and it is here to stay indefinitely.

ABOUT THE AUTHOR

Ishita Bhardwaj is an upcoming final year BTech ECE student at IGDTUW. Throughout her college years, she explored her creative and technical sides in parallel. She used her college period to explore various technologies like Cloud Computing, Graphic Designing, IoT, Backend Development and Blockchain development. She is a professional Bharatanatyam dancer. Her interests lie in photography, writing, traveling, Web 3 and psychology. Her motto in life is - it it's great to succeed, but it's much better to fail and learn.

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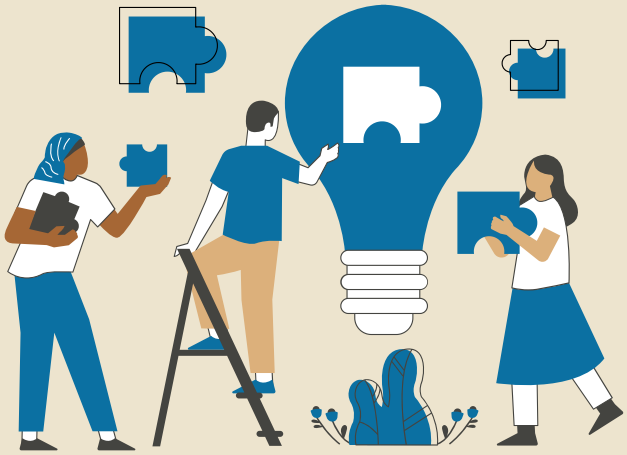

Re-imagining Entrepreneurship & Mental Health

with Shubhangi Gupta

Let's start off with an introduction and just for fun - your favorite pastime?

I am Shubhangi Gupta, the co-founder of Raahee, a community aiming to de-stigmatise mental health.
Through this initiative, I have been able to impact the lives of over 10,000 people globally.
My initiative, Raahee, actively supports the Queer Community as well.
As for my favorite pastime, I'm a huge Potterhead and love to talk about Entrepreneurship.

How were you introduced to the startup ecosystem and which connections did you leverage to know about these opportunities ?

I am an accidental entrepreneur, we started Raahee to help our friends and provide accessible mental health services. Fortunately, we had an incubator on our campus and that's how our startup journey began. Cisco ThingQbator provided us with various learning opportunities, they conducted regular workshops for design-thinking, business-model design, leadership and product management.
After being exposed to the startup environment, we completed Startup School by YCombinator and became part of their founder network.

We also got a chance to participate in the Microsoft Imagine Cup where we were the runner-up in the healthcare category in India. It motivated us and helped us connect with other aspiring entrepreneurs.
I got a chance to interact with other founders through Twitter and various community meetups that eventually formed the current mindset I have.

Your opinion about the startup ecosystem in India in close association with Mental health

I am glad to see that the startup ecosystem is thriving in India and so are mental health startups. When we started, mental health was a taboo topic. We had to deal with a lot of stigma in explaining mental health to anyone. Now, at least everyone listens and people want to be more aware about it!
At every hackathon I go to, I see a few students working on this topic and each of them has a different struggle, a different story and hence, a unique product. Mental Health is a large umbrella under which many startups can thrive, partner and grow.

How did Rahee come to be and what was the thought behind it ?

This calls for a story! In my first year (2017), our university had a counselor and being the class representative we were asked to encourage students to seek help from her. Some students told me that they do want to visit the counselor but not be seen around her clinic. For an initial few times, I asked them to take me along and share that I'm visiting and they are accompanying me.
After a few months, the counselor stopped visiting.
I realized that even if mental health services were made affordable (free of cost) and accessible (on-campus), people will be hesitant to visit because there is a stigma around the issue.
We began building our product and community at the same time, which is unlikely for most startups. Through our community, we reached out to thousands of students to normalize the conversations around mental health.

You are also pursuing a MA Psychology from IGNOU. What led you to shift your career from one in software engineering ?

In my third year, I realized I did not want to pursue software engineering as a career and my internship at Wabtec solidified that thought. I explored product management, marketing, business and other domains with Raahee.
I had been involved with communities since 2018, and that led me to explore Developer Relations and take a deep dive into the domain. Currently, I work as a DevRel with Atsign Company, which is a startup aiming to make internet privacy real.
I also wanted to continue studying, and like many, I believed that engineering is like Rajiv Chowk Metro station - you can take any train from there and be who you want to be! Following this ideology, I decided to board the one which took me to a place where I can better support Raahee and learn from the struggles of upcoming psychologists and gather more knowledge on the subject.

Your future plans as a future entrepreneur and the steps you have in mind to achieve them.

I do believe once you get into the entrepreneurial mindset, it can be indeed tough to leave it. I have been contributing to budding startups by mentoring and sharing my knowledge with them.
As for now, my plan is to work and build Raahee, hopefully, into a unicorn startup!

ABOUT THE AUTHOR

Shubhangi Gupta is a BTech graduate from 2017-2022 batch, IGDTUW. She is also a Gold Microsoft Learn Student Ambassador and is currently leading the healthcare league. Along with being a co-founder for Rahee, she is also the co-organiser of Google Developer Groups Noida and Flutter Delhi. She is an advocate for Diversity and Inclusion which is reflected by her work with the Women Tech Maker and the #IamRemarkable Communities, respectively. She has also worked with NGOs like Goonj and Rotaract Club (Rotary.org) to help improve livelihood during disasters and increase awareness on various social issues.

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Let's talk Research

with Amandeep Kaur

The field of research and the life of a research scholar requires patience and perseverance. And, often no one really tells you about what this field of academia is really like until you experience it yourself. As a research scholar, you will be given tasks to perform, and results may not come as expected; you could be asked to discard a month's effort, or re-do it many times. But what willed me to pursue research was my strong faith in my decision to go for Master's after graduating with a degree in B.Tech.

Image source: https://images.app.goo.gl/KPwwJqd6QRye4DCh6

This article will give you an overview of a "generic" roadmap to the research field. First, ask these questions: Why research? What drives you to take up a research project? What are the benefits? Is it worth it?
So, if your answers are among the following:

- You are interested or passionate about exploring some specific domains.
- You plan to go for a master's/Ph.D. in the future
- You are curious to know how research happens in the real-world environment, and how it is different from the corporate world.

You are ready for research !

> ***Speaking of my own journey with research, it began as early as 2020 when I was in my sophomore year. Yes, I started early!***

In the summer of 2020, I was introduced to the exciting world of Artificial Intelligence through an ACM workshop at my university. I worked on a computer vision problem, of object detection and image captioning, under the mentorship of Prof. Rishabh Kaushal. In January 2021, I was selected as a research intern in Prof. Dr. Tavpritesh Sethi's Lab (an AI-based Medical research lab), at IIITD. I worked with clinical video data collected from AIIMS. We developed a non-invasive computer-vision-based method for vital predictions (e.g., heart rate) in this project. Later that same year, I was chosen as a MITACS Globalink Research intern from India at the University of Alberta, Canada.
I investigated a new architecture for medical image organ segmentation using Explainable Artificial Intelligence (XAI).

Everyone's journey in academia research is different but having said that, it is really important that you follow a checklist or atleast, know where to begin and how to gain relevant research experience when you are still in college and have access to scholars of your home institution.

> ***The preparation for cracking research internships starts right from learning and understanding the domain you want to research.***

It's recommended that you cover the fundamentals of your interested domains, and have some basic projects implemented. This is especially helpful, as it highlights your skills and ensures that your interviewer sees a synergy with the knowledge you have and their ongoing projects. There are high chances of selection if you have implemented or previously worked on similar projects with other research labs or individually and have had it peer reviewed through hackathons, research symposiums and conferences, among others.

Once you have the above sorted out, you can further look for opportunities that offer you professional-level experience in research through research assistantships. The important aspect of getting up-to-date with these opportunities is through the LinkedIn platform. Usually, professors may post the requirement of an intern for their projects. They mention the skill set, qualifications, stipend, and other details. So look out for such posts! There are also curated lists for undergraduate research internships on GitHub which can be your one-stop resource for getting to know more about them.

The timelines for the various internships usually differ from program to program, so check their latest websites for updates. Also, take note of the covid restrictions in that country. Apart from these programs, you can visit individual professor's websites and see if they are interested in giving you an intern position - some may be funded, some may not be, but you should take a chance at the very least!

> ***Another important aspect for bagging these opportunities is leveraging your network the best way possible and the best way to do that is to attend seminars/talks by professors.***

After their session, try to approach them, stating the relevance between their talk and your plans, and ask politely about any positions in their lab. Sometimes, if a professor finds that you would be better suited for another lab, they might recommend or redirect you to another professor/lab, and this is way more effective in getting an internship than simply cold emailing professors. Furthermore, research can be done individually as well as in a group. It can be stressful at times, so, I would suggest you form a group of 3-4 students, with similar visions and goals, to work together on a project. In this way, you will learn teamwork, and will not lose when research life starts getting overwhelming.

Image source: https://images.app.goo.gl/c5hm1mNQGJa87Cmw8

> ***But, now we come to the most important question of them all - what after research?***

If you want to sit for placements at your university, having publications and exposure to research will indeed prove to be beneficial. It will give you something to talk about with the interviewer and you can take this opportunity to demonstrate problem solving skills by telling how you approached the problem statement in parts and then, in its entirety.

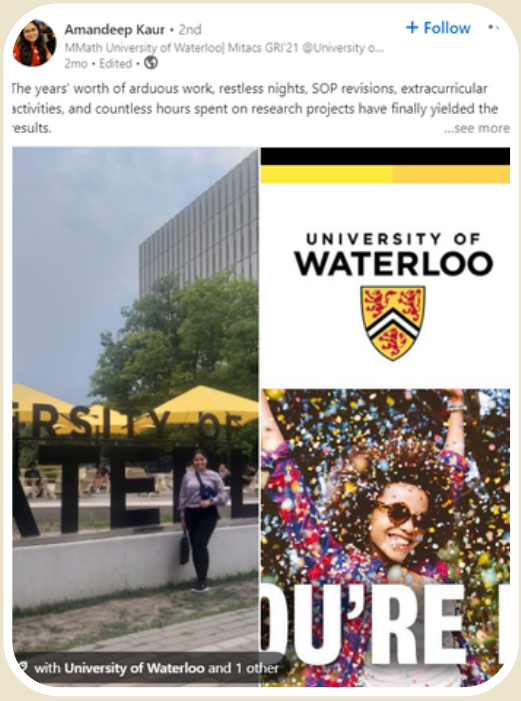
However, if you are planning for a master's abroad just after completing your bachelor's (not at all a hard-fast rule) my suggestion to you would be to try gaining research experience at 3 levels. Start with your university professors/Ph.D. scholars/ JRFs. This level is crucial as it will give you an introduction to the research world (writing, implementing, presenting your work, etc.) This would also be beneficial as you could ask for a Letter of Recommendation (LOR) from your professor, which you will get to know is an integral part of research internship applications. Next, try to find opportunities in other universities' research labs (IITs, IIITs, top NITs). This would give you a broader perspective of research and will take you out of your comfort zone and would open doors for another LOR from the professor you work with. Finally, apply for international research internships through the programs or by contacting professors using cold-mailing. This would provide you with an opportunity to work in a cross-cultural setting with cutting-edge technical resources and yet again a third LOR can be received from this professor.

Heads-Up: When you apply for higher studies, at least 3 LORs are required. From my personal experience, the above-stated strategy would not only provide you with the required LORs but also the required skill set for pursuing higher studies.

Image source: https://images.app.goo.gl/ZCnpaYL137SRtiXdA

> *As it is, I will be joining as a master's student at the University of Waterloo, Canada from Fall 2022.*

I am passionate about AI and its application to healthcare. I see my future as undertaking a deep body of research on healthcare AI applications and contributing to driving innovation in that field. With that, I would like to conclude that the field of research has a lot to offer. So, when you begin exploring other fields like IoT, Blockchain, Cyber Security, among others, do give research a try as well. Who knows? You might end up finding your calling.



ABOUT THE AUTHOR

Amandeep Kaur is a BTech IT graduate batch 2018 - 2022 from IGDTUW. She is currently pursuing a Masters of Mathematics in Computer Science at the University of Waterloo. She is passionate about AI and its application in healthcare and has published a C++ introductory course on Udemy that has 1K+ active students enrolled. She was chosen as the Mentor Lead for the Delhi Government's initiative Education Mentoring Program (Now Desh Ke Mentors) to encourage STEM education among girls.

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ANNEXURE:

Curated list of undergraduate research internships:
https://github.com/himahuja/Research-Internships-for-Undergraduates

The Microsoft Experience: Learnings of an SDE Intern

with Srinidhi Ayyagari

'Tis the season of internships! It is that time of the year that invokes equal parts of excitement and nervousness. Roughly a year ago, I got the chance to apply and implement theoretical concepts of engineering outside the four walls of the classroom as a SDE intern at Microsoft (ahem, well due to the pandemic that was still my study room.) My journey to get to this point was a tumultuous one, yet I loved every part of it!

Before the internship

The time around which companies visit the campus for internship is usually very hectic for any student. My interviews were scheduled around the time when our team was listed among the top 10 teams in the three-member category, among 600+ participating students all across India, in the Mars Colonization Program conducted by Microsoft during the Engage Virtual Mentorship Initiative. We built a Path Finding Visualizer focusing on Dijkstra's and Breadth First Search algorithms in order to find the shortest path between two points while avoiding obstacles on the way. (Honestly, it was fun and exciting to visualize how these algorithms actually work!)

But, having said that, the preparation time can get a bit stressful. With all the interviews, coding rounds, mock tests, hackathons, rejections, and selections, it can be difficult to maintain an optimistic outlook. Here are some quick tips that you can keep in mind :-

- Practice questions while thinking out loud. And after a point, try to go for timed coding practice sessions. This would help you better adjust and manage time.
- Never try to code directly, always think about the solution first before jumping to the implementation. It is said that, 'one should think twice and code once'.
- Analyze the different edge cases and also the time and space complexity for different approaches. And even during your interview, ask questions to clarify your understanding of the problem. Mock interviews with seniors, mentors, or peers are a great way to gain feedback and analyze your performance.
- Do go through some sample behavior questions. Relate your qualities and strengths with a real-life scenario. For instance, if you say you are a problem-solver, demonstrate it with an example by connecting it to a situation where you took up an issue and proceed to explain what action you took and the impact your actions had eventually. (hint: college societies)
- And needless to say, it is exceptionally important to research a little about the company and review the job description before appearing for the interview.

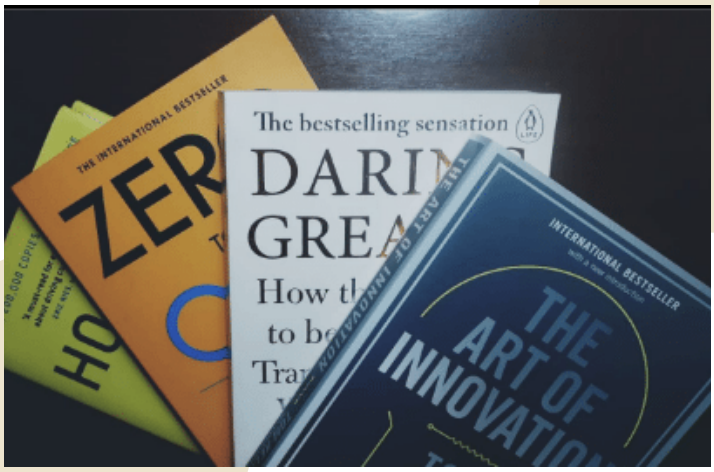
Showtime!

And finally, after all the coding rounds, interviews, hackathons, and tests I was finally going to join Microsoft India as a Software Engineer Intern! I joined Edge extensions in the 'Experiences and Devices' team and what followed was 8 weeks packed with fun and of course, learning! It was a super productive summer with interesting projects, new technologies, virtual movie nights, team get-togethers, and lots of coding.

Amidst all that fun, there were tons of opportunities that helped me learn and grow - as a student, as an engineer, and as an individual. Here are the top lessons that helped me make the most of my internship:

1. When in doubt, ask away!

If you've tried but still don't understand something, simply ask! Those 8 weeks taught me how asking the right questions is the most important tool for solving problems and discovering solutions. I'll always remember what my mentor told me when I was stuck with a particular problem for two-three days in a row. Estimate and set a limited amount of time for tackling an issue and in that set period of time, focus and give it your all: reading documentation, going through the comments in code (surprisingly useful!), watching tutorials and searching for errors on stack-overflow.
Evaluate all your methods and outcomes and once that set time is over, do not hesitate to ask for help. Inputs and advice from your internship mentor, buddy, and manager can guide you when you feel a little stuck. Remember that there will always be someone willing to help you !



2. Explore, network, and connect!

One of the best things about my internship was that I got the opportunity to reach out and connect with members both within and outside my team. We used to brainstorm and discuss ideas with everyone, right from the product management team to senior engineers from the Redmond office.

Interns are an integral part of Microsoft, you would get invited to a range of events: from new product feature discussions to intern networking events. Make sure to join in for all of them! Step out of your comfort zone, join team scrums regularly, keep informed about the latest company news, and interact with your co-interns and people from different departments. Most importantly, if you have any cool ideas - voice them! Be friendly, open, and approachable. This is your chance to build long-term professional connections.

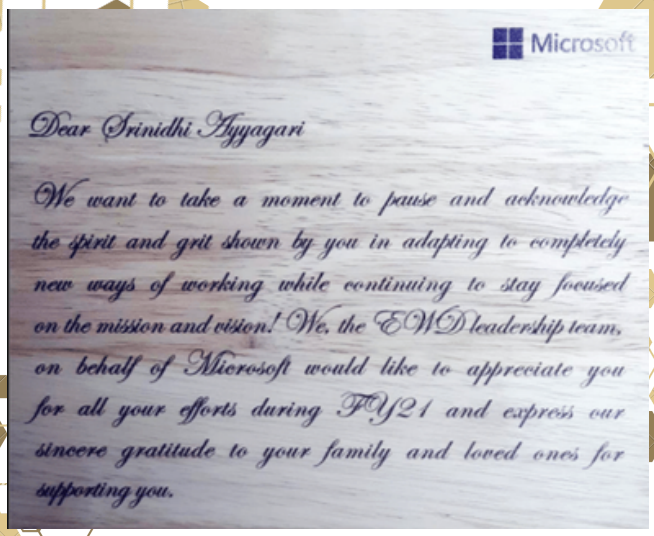
4. Remember to have fun!

One of the first things we were told at our intern orientation webinar was to have fun! Microsoft always encourages holistic development and organizes a ton of cool activities. My favorite memory would be the movie night hosted by our team where we all bonded over the classic film, 'The Blind Side'. I loved the fun-filled 'virtual chai sessions' where we'd play Codenames! To say that life at Microsoft is exciting, is an understatement. You will get to meet the smartest minds and solve the most fascinating problems. The best part? The solution you build will touch the lives of millions!

And last but not the least, for future interns all set to begin their internships, the only thing I have left to say is - gear up for an experience of a lifetime!

3. Get organized!

With so much to explore and so much to learn every day, it can be easy to get confused. Maintaining a to-do list helped me make my work more manageable and allowed me to take a zoomed-out perspective. To understand the large codebase you will need to go through a lot of documentation, tutorials, and code comments. Be sure to jot down your thoughts, ideas, progress, deadlines and learnings somewhere. Changes are an integral part of software development which would only refine and improve the end result. Being structured and organized would help you adapt to new directions easily. You would also get the chance to learn good coding practices from the best. So, be sure to make the most of it !



ABOUT THE AUTHOR

Srinidhi Ayyagari completed her Bachelors of Technology in Information Technology from Indira Gandhi Delhi Technical University for Women, India. She has previously worked with Microsoft as a Software Engineering intern. As an active leader in various professional development societies such as the ACM Student chapter and IEEE Student Chapter, Srinidhi has organized multiple technical events, workshops, and seminars to foster collaboration and innovation. When not working on a tech project, she likes playing the carnatic musical instrument - Veena, solving sudoku and enjoying a nice game of cricket.

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The Spirit of Open Source

with Vani Chitkara

Open-Source, a word that holds thousands of opportunities with it. Open Source is not just about writing code and creating pull requests. It's about collaborating and contributing to make technology accessible to all.

Open Source contributions go way beyond coding - you can contribute to open source by designing graphics, writing technical blogs, creating content for social media, UI/UX designing, and the list goes on. And, if you're wondering how to grab these opportunities and make a career in open source? Then this article is for you!

> *To start your journey in open source, the best way you can begin is by taking part in open source programs and internships.*

There are plenty of open-source programs taking place throughout the year. Hacktoberfest, Outreachy, Google Summer of Code (GSOC), Google Season of Docs (GSOD), LFX Mentorship, and MLH Fellowship are some famous programs for which you can also take help from IGDTUW students and alumni, who had previously participated in the same.

After getting into these open-source programs, you can get familiar with the organizations that frequently take part in these programs and are on the lookout for open-source interns and full-time employees. Most of these companies are 100% remote-friendly, which makes it very convenient for those people who want to work from the comfort of their home.

If you're an open-source newbie, you should start your open source voyage by taking part in Hacktoberfest - the month-long open-source program taking place every year in October. You need to submit at least 4 pull requests for any project that is taking part in Hacktoberfest, and you can get a Hacktoberfest swag t-shirt or plant a tree in return. Sounds fun, right? It really is.

Other beginner-friendly programs are Girl Script Summer of Code and Script Winter of Code. These programs offer plenty of interesting projects along with diverse tech stacks with many projects being extremely beginner friendly as well.

> *For people having good development skills, GSOC, LFX Mentorship, and MLH Mentorship are great programs to take part in.*

GSOC requires project proposals and to learn how to make those proposals, you can refer to online resources or blogs by past GSOC participants. For LFX Mentorship and MLH Fellowship, the initial application is essay-based, where you need to write 4-5 essays explaining why you are the best fit for the program. There are plenty of blogs and podcasts explaining the application process in detail. For people with a passion for writing technical blogs and documentation, Google Season of Docs is the program to look out for.

Image source: https://user-images.githubusercontent.com/64553247/136261073-a6cf1ead-4c46-4f80-ae2e-739f036c6971.png

If you have intermediate-level development skills (front-end development, back-end development, full-stack development, android development, iOS development, machine learning, data science, etc.) or have a fair amount of experience in graphics designing, UI/UX designing, technical content writing or social media management, then you can apply for Outreachy. **Outreachy has a huge variety of technical and non-technical projects including every possible tech stack that you can think of.** Java, JavaScript, Python, Ruby on Rails, Golang - you name it and Outreachy most possibly will have a project on it. As a past Outreachy intern, I can vouch for the fact that it is one of the best programs to get into if you want to make a career in open source.

> ***For those who don't know, after my Outreachy internship ended with OpenArchive, I have been working with OpenArchive as a part-time contract worker with them.***

Outreachy is a three months paid remote internship program for under-represented groups in tech. Their main goal is to support everyone who wants to get into open source and wants to consider it as their career option. The selected interns get paid with a stipend of $7000. Organizations like Linux kernel, Apache, CNCF, Fedora, Mozilla, and many more take part in this program and the internship projects may include programming, user experience, documentation, data science, community event planning, and much more. The projects are usually beginner-friendly and not many prerequisites are required to contribute to them. There is no prior experience required for applying to work on these projects either.

Getting into Outreachy involves 3 steps:

1) The initial application:
The applications for the Outreachy internships open twice a year. For the Northern Hemisphere folks (including India), it opens in February and for the folks in the Southern Hemisphere, it opens in September. The initial application asks about your time commitment and has some essay questions that you have to answer according to the instructions given. The essays ask about the discrimination you might have faced while pursuing education in STEM and if you belong to an under-represented community in the tech industry. My advice would be to write extensively about your personal experiences in these essay questions and support your statements with facts. Also, Outreachy requires the interns to be available for a continuous 42 days, so be precise about your time commitment. If you want, you can reach out to the past interns, timely to review your initial application.

2) The contribution period:
If your initial application gets accepted, you move to the contribution period. During my internship cohort, out of the 3,308 initial applications, only 733 moved ahead to the contribution period. During this time, you have to select some projects to contribute to, out of all the projects listed on the website. The projects list out the prerequisites (if any), the number of interns they'll accept this year, and what they want to accomplish during the internship period. I'd advise you to select a maximum of 3-4 projects and contribute extensively to them, instead of selecting 7-8 projects and just making 1 or 2 contributions in each. Reach out to your mentors and introduce yourself to the community.

If you get stuck during the contribution period, feel free to take help from the mentors and help your fellow applicants as well. For selecting the projects, I'd suggest selecting the ones which match your skill set and skill level. The skill level for Outreachy projects is rated on a scale of 1-5 wherein skill level 1 means that the skill is nice to have but not necessary, while skill level 5 implies that the skill is a must-have, and you should have somp prior experience in implementing those skills.

> ***A pro tip : Select the organizations taking fewer interns so that you can have a better chance of getting the internship, since people usually don't try for projects taking fewer interns.***

Therefore, you'll have fewer people contributing to that organization, which in turn increases your selection chances.

3) The final application:
Before the contribution period gets over, a final application has to be made for each project that you have contributed to. The final application re-confirms your time commitment, your experience with the community and other open source communities, your relevant skills and experience, and how you plan to work on the project, which includes a project timeline.

The mentors take two weeks to go through the final applications and finalize the interns for their projects. During this time, if you want to, you can continue to contribute to the project. After the interns are finalized, Outreachy publishes the result on their website. The mentors get in touch with the selected interns, formulate their work strategy, and organize kick-off calls! Outreachy interns are also supposed to document their journey throughout the internship via blog writing.

I interned with OpenArchive and helped them with content creation, research, and website management. My mentors Natalie and Viktoriia were super helpful throughout the internship tenure. It was the first time that I was researching digital rights, internet privacy, and human rights, so a lot of terms were unfamiliar to me. Natalie and Viktoriia helped me to get familiar with these terms and helped me with the research when I felt that it was getting too much to handle. I learned various new skills during my internship, my co-intern helped me learn graphic designing on Figma and I eventually became skilled at creating custom graphics during my internship.

If you plan to apply for Outreachy this year, I'd recommend you to get familiar with Git and GitHub, and start contributing to either small-scale or large-scale open-source projects. Get as much open source experience as you can before you apply. For more information about Outreachy, you can visit their website and subscribe to their mailing list to get notified when applications are open for the next round of Outreachy internships. May the spirit of open-source be with you!

ABOUT THE AUTHOR

Vani Chitkara is an upcoming final year student at IGDTUW. She was selected as an Outreachy intern and collaborated with OpenArchive. She is an active member of several tech communities, has been the club leader of the Google Developer Student Club at her university, and has volunteered at several initiatives that support and uplift women in tech. She has been a student fellow at the Reboot Student Fellowship Program - a fellowship based on the intersection of tech, humanity, and power. She was also awarded a scholarship for attending the GHCI Conference. Her interests include web development, graphics and UI designing, reading, writing, and performing arts.

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Hacking Web3.0 with Hackathons

with Pradyuman Verma

An invention of the 20th century, 'The Web' or 'Internet', as we know it, changed the world, and an invention of the 21st century - Web3.0, is well on its way to revolutionise the world once again. Since its invention, the web has undergone many changes, so before we get into the depths of Web3, how about we discuss its journey this far ?

The modern internet we use nowadays is the web or W3. This web is a bunch of interconnected servers, transferring and sharing information. Throughout its inception, it has had various transformations like from WEB 1 to WEB 2 with the latest web version being WEB 3.0.

In simple words, **WEB 1.0** is a read-only web implying information that is written on websites and can be read by everyone. **WEB 2.0** is a read-write web implying content can both be read from and written to websites. This is the stage most of us are familiar with and **WEB 3.0** is the newcomer - a read-write-own web where information is decentralized and smart. This information can even interact with users and the web. Web 3.0 (coined the Semantic Web initially by Tim Berners-Lee, the Web's original inventor) is an even more fundamental disruption. It is a leap forward to **open, trustless, permissionless, and decentralized** networks.

> ***My journey down this rabbit hole began with Summer of Bitcoin '21.***

Summer Of Bitcoin '21 is a global internship program introducing university students to Bitcoin open source development. I got to know about the event from the college notice board. The program started in the previous year itself, so the selection procedure was slightly different from this year. We had to go through a total of four eliminatory rounds.

- The first round was a **Decentralization Round** - a general test or more of a know-more-about-you assessment. We had to fill out a google form describing our tech career and opinions regarding decentralization and the future. After a week, I got an email confirming that I was shortlisted for the next round.
- Now the next round, **Round 2**, was a brainstorming one - involving your competitive programming skills, problem analyzing ability, algorithms, and much more. The shortlisting mail itself contained the next task. We had to build an efficient algorithm for handling mempool - ensuring that the miner receives maximum profit for each block. I implemented something similar to a Knapsack approach - greedily maximizing the profit for the miner. You may find the solution on my GitHub profile.
- After around a week, I received another mail listing the next steps for **Round 3**. This round had two tasks: First, we needed to work on optimizing the solution submitted for Round - 2, and for the second one, we had to go through bitcoin's open-source repository and contribute to any issue which caught our eye. For completing the first one, I used an approach involving graphs and fractional Knapsack.
  - We could treat the list of transactions as a forest of individual-directed graphs representing transactions.
  - Then pick each component of the forest and sort it topologically.
  - Traverse through each component and find the total fees and weight.
  - Once we have the total fees and weight, we can find the ratio of total fees and weight, i.e., r = total fees/total weight.
  - Store the components in a list and sort the components based on the ratio.
  - Now, we can efficiently implement fractional knapsack, and the task is done!

To complete the second part, I worked on issue #22254 of the bitcoin repository that you find on my GitHub. The submission had to be done via mail-in a txt file.

- And clearing this round advanced me to **Round 4** which was an interview round. The focus for this round was on our views on Bitcoin and Decentralization.

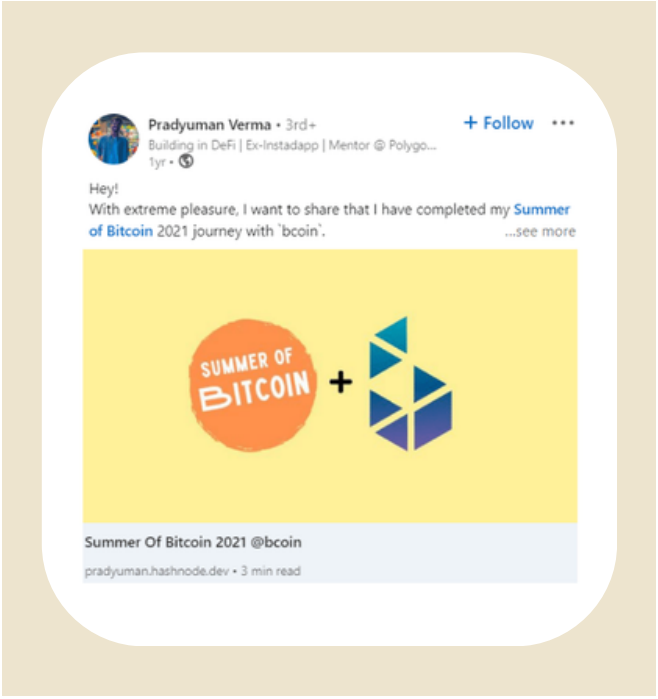
And with this, the series of tasks ended. We waited for the results and I received an email confirming my selection. Now, I had to delve into bitcoin and contribute for the next two months. As we were novices in the field of bitcoin, a one-week seminar by Kale Rosenbaum was organized for us, and the week-long sessions were indeed quite insightful and mind-boggling. After the initial sessions, we were assigned projects to work on - I got **bcoin** as I was good at JavaScript. The following month, I worked with Matthew Zipkin and got involved in many discussions with him.

After working with Bitcoin for almost two months, I started reading about other blockchains. I learned about Ethereum, a smart contract supporting blockchain, and started working at a protocol named INSTADAPP, which is a multichain Defi assets management platform. The journey was difficult initially due to the lack of material on the internet on this topic and no upperclassmen in college to guide. But in this field, you learn only from experimenting and experiencing.

> ***Another hackathon that I participated in was MIT Bitcoin Hackathon 2022 organized by the MIT bitcoin club.***

The MIT Bitcoin Club has been organizing an expo for the past 6-7 years, where degens from all over the world come, build and pitch their decentralized products. It's a 2-3 days event full of sessions by guest speakers, code sprints, pitchings, and lots of fun. Initially, an IIT Bombay alumni approached me via LinkedIn, stating that every year a team is sent to MIT to participate in the MIT Hackathon on behalf of Team India, and he was building one for the same this year.

- As a first step, we brainstormed many potential project ideas, understanding and identifying the tracks we could integrate and discussed the tech stack that we might be needing for the idea. We all agreed on working on a cross-chain payment system using Axelar SDK for user's data access, chain link for price feeds, and Skynet's Sia for deploying our platform on decentralized storage.
- Once the thirty hours sprint began, we categorized the independent tasks and divided them among our team members. So one of the members handled the integration of chainlink price feeds, another worked with Axelar SDK, another worked on the frontend, one integrated it with web3, and another looked into the deployment of decentralized storage.
- So with this division and management, we got the project ready, though we faced some challenges. A significant part of our project depended on Axelar's cross-chain gateway API, which helps unlock user's asset data on the chain needed for transfers to another. At that time, there were only a few currencies (like LUNA, UST, etc.) and even fewer chains were supported by Axelar for test platforms, so getting the assets for the supported chains and currencies was challenging. Eventually, we managed to deploy the platform to Skynet's decentralized storage using Sia so that a merchant doesn't have to worry about the payment infra going down if centralized services (like AWS) went down, simultaneously.



But all this hard work paid off when we won the track prize for Skynet and Decentralized Storage! Talking a bit more about the potential of our project, we all know or agree that blockchain is still lacking mass adoption. It is not easy for merchants to accept volatile crypto payments.
The presence of fragmented liquidity on several chains like Ethereum, Bitcoin, Polygon, Avalanche, Solana, etc, makes it difficult to manage payments as sometimes the user has funds on one network while the merchant only supports payments in another network. Because of this, it is not easy for payments to take place. Our app effectively aims to provide a solution for this, where we used Axelar SDK to perform the cross-chain transfer of assets. Using our interface, a user with assets on one chain can efficiently perform cross-chain payments without owning assets on other chains. Skynet deployment makes it independent of any centralized services failure. You can check out the project here: Cross-chain payments on GitHub (see annexure)

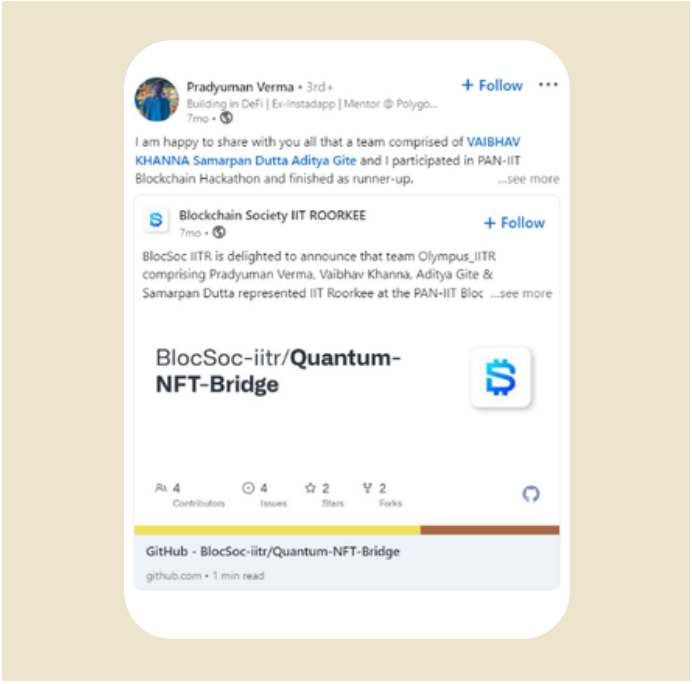
> ***Another significant hackathon in my journey was PAN IIT Hackathon 2022, for which my team won the runner-up position.***

In collaboration with Bru Finance and Coding Club, IIT Bombay organized a PAN-IIT Blockchain Hackathon 2022 for blockchain enthusiasts under the Inter-IIT event - Tech Symphony. I learned about it through official announcements or emails. For this hackathon, we, a team of four, had to work on a problem statement.

Recently, we have seen a leap in several protocols built either on top of the Ethereum Network as L2 (Layer 2) sidechains or as wholly separate ecosystems sporting a variety of virtual machines for executing contract codes written in different types of languages and stacks. To make all these blockchains work coherently, many projects come up with Bridges that uniquely represent cross-chain assets and allow for seamless transfers. The problem with tokens nowadays is not the standard they follow (such as ERC20 or ERC721, or ERC1155). Instead, it is the restrictions of the base technology which limit the use case of these tokens.

To make all these blockchains work coherently, many projects have created Bridges that uniquely represent cross-chain assets and allow seamless transfers. Our task was to build two bridges for the cross-chain asset (Non-fungible assets, to note) transfers between Ethereum - Solana and Ethereum - Avalanche.

We proposed and built **Quantum NFT Bridge** - a Decentralised NFT cross-chain bridging platform that supports the transfer of NFT minted using Quantum NFT manager. We added initial support for NFT transfer between Avalanche (Fuji) with Ethereum (Kovan) and Ethereum (Kovan) with Avalanche (Fuji). This can be extended to other chains as well in the future.



Wondering how it works?

- As a first step, users connect to our bridge, i.e., link their wallet.
- Then they submit their NFT to Quantum Bridge using the transferFrom function.
- When NFT has been received, Quantum Bridge locks the NFT on the current NFT. This step basically transfers the NFT to our address.
- In case the user wants to migrate the NFT, it can be done using the migrate function, which triggers an event.
- Then, the sequencer (our web2 client) catches the event and validates all required logic.
- Once all the logic is verified, the minting of NFT is processed on the target chain with the same metadata and tokenID using nftManager.

And the NFT is transferred!

About the project and its scalability, as mentioned earlier, with so many different sidechains or new chains coming in, it is essential to have a mechanism by which users can transfer their assets, be it fungible or non-fungible, from one network to another. Quantum provides an efficient, easy, and safe way for this process. The project can be scaled to include other chains in the future as well. To know more, you can check out the project - Quantum NFT Bridge, on GitHub.

The most crucial part is understanding the core of this technology, that is, blockchain itself and how it works. This whole field is open-source. You can find most protocol code on GitHub/GitLab. The best way to learn and excel is by participating in hackathons. You will find some great devs to collaborate with in the process as well. Some reference books that can come in handy for learning include Grokking Bitcoin by Kale Rosenbaum, Mastering Bitcoin and Mastering Ethereum (for understanding EVM).

Image source: https://tm.ibxk.com.br/2016/10/24/24182320165444.jpg?ims=1200x675

> *After some basic understanding, you can decide whether you want to be a blockchain developer or a smart contract developer, as the pathway divides from this point onwards.*

A blockchain developer builds the blockchain. On the other hand, a smart contract developer builds on top of the blockchain. For blockchain developers, you can start by contributing to open-source code on blockchain, participating in discussions, and resolving issues. For smart contract developers, you must learn about smart contracts and the language being used to code them. The most famous and accessible language is Solidity. Some resources for the same include a workshop by CryptoZombies and the YouTube course by Patrick Collins.

And last but not the least, keep practicing to test your skills and be on the lookout for hackathons to participate in. A lot of hackathons have happened on web3 over the years. You can find out about them on Devfolio, or just google it!

ABOUT THE AUTHOR

Pradyuman Verma is a final year student at IIT-Roorkee pursuing B.Tech in Chemical Engineering. He is a blockchain enthusiast who is the founder of BlockChain Society at IIT-Roorkee. He was a Summer of Bitcoin fellow in the year of 2021 and was a winner for the MIT Blockchain Hackathon '22 organized by SkyNet.

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https://github.com/pradyuman-verma
https://github.com/bitcoin/bitcoin/issues/22254
https://github.com/BlocSoc-iitr/Quantum-NFT-Bridge
https://github.com/kaukushikmar/Cross-chain-payments

Pave Your Way with Data

with Deeksha Anand

Unlike how some of you may think, my journey with data analytics wasn't a straightforward one. Though I am from a core-technical background, programming just never worked for me.

I used to hate coding. But, then, I was fortunate enough to get a project management (non-tech) role at ION right out of college. My transition into an interdisciplinary role which covers both project management and data analytics was one of more trial and error than a conscious shift.

As a project manager, working on numerous projects in the first year itself, I understood the tediousness of repetitive manual work throughout the company. This situation prompted me to learn PowerBI and build automated reporting frameworks by applying my knowledge, thus taking my first steps toward data analytics.

Over time, I took up different skills revolving around data and also, had the opportunity to be an educator, teaching data analytics to over 1000 employees at ION where I work as a Data Analytics/Strategy Manager, to reduce resource dependence and increase awareness about data.

As my work in the field of data analytics grew and as I delved deeper into data analytics as a career option, I was astonished at the lack of diversity in the field.

> ***According to BCG, only 15-20% of people in Data are women, the lowest representation as compared to all tech fields.***

To bridge this gap, I founded and led a chapter - Women in Data chapter, in New Delhi. Through this initiative, I try to reach out to women, and raise awareness about data-oriented jobs and the right skill set for them, so that women, especially, get equal access to any and all opportunities in the field of data science.

In lieu of the same spirit of sharing and education, I also have founded my entrepreneurship venture - One Stop Data. It is an initiative that I started in February 2022.

Image source: https://onestopdata.org/

Currently, I am raising awareness and educating individuals through my venture. But in the future, I wish to operate on a large scale so as to bring real change while establishing my brand and using my experience to mentor and inspire diverse groups in tech towards data analytics and data science. In the last 3 months, I have educated over 4000 people on data analytics; mentored over 200+ people in 1:1 interactions, and built a community of 80K+ data enthusiasts through my Instagram and LinkedIn handles.
Having self-transitioned into the field of data myself, I can vouch for this field. It is a great option for anyone interested in working along the lines of identifying patterns and trends along with working with metrics and numbers.

If you love to play with data or look for reasons behind every piece of information you see, then this career path would be more than an ideal fit for you. Also, if you don't like software development or writing code and you are looking for a role which is both a combination of tech and non-technical aspects of IT, then you can definitely pave one for yourself with data!

> ***Currently, the demand for people in data analytics is way higher than the supply. Hence this is the best time to venture into this field!***

Data is everywhere! And we need people to help draw insights from it. A possible roadmap for students pursuing their undergraduate or graduation could be as mentioned below:

- Learn the skills: Excel, PowerBI/Tableau, SQL, and Python/R. You should learn a minimum of 2 from the ones mentioned, apart from Excel.
- Once you understand the basics, start working on projects to gain hands-on experience. Go to websites like Kaggle, Google Public datasets, etc. to get your datasets and start building a portfolio!
- Find a mentor on LinkedIn or Instagram. Having an industry expert really helps to navigate and not make mistakes.
- Network with people in your domain, join data communities online and attend data analytics events. This way you will create connections and can also possibly create opportunities for yourself to get referrals.
- Create an ATS-compliant resume and find internships or jobs online through job portals.
- It is easy to start as a data analyst and then move into a data scientist role as data science will require more learning and experience.

The field of data analytics is slightly difficult to get into. But once you are in, the growth is exponential. Practice, be patient and stay persistence in all that you do while practicing and working with data you are familiar with. The familiarity will help you draw the insights. Knowing the tools is not enough. Work on communication, presentation, data storytelling, etc. to build a strong profile.

For all budding data analysts out there - you are your own personal brand. Promote yourself!

ABOUT THE AUTHOR

Deeksha Anand, an alumni of IGDTUW and is presently a Data Analytics Manager at ION (a B2B fintech market leader) and the founder of Onestopdata (a data community with 80K+ data enthusiasts). She is a Data Analytics & PowerBI Instructor and a mentor who has trained 4000+ people in over 20 countries. She has delivered talks, led sessions, and hosted webinars on Data Careers and Career growth via her 'Women in Data' community.

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Life meet Personal Branding

with Abhigya Verma

Stories? Who doesn't love them? Today, I will be narrating the story of a girl who saw the highest and went to the lowest, yet at the end, rose like a phoenix. My sole purpose in writing this article is to explain to young aspiring minds that everything they see may not be the sole truth. Behind every achievement, there is dedication, lots of hard work, and sometimes tears too.

I had always been a star student at my school, the teacher's favourite and even the principal knew me! But, even though I was adamant to build my own brand from the very beginning of my college days I felt like everything I had earned in those 12 long years in my school failed to make a difference, I was just an ordinary student like all the others at freshers orientation, more so every other girl there was a topper from her school. I knew absolutely no one. My first day at college was great, I made friends, and learned a lot. The circumference of my life, proved to be a small one because one of the biggest lessons I learned early on was that you can never be the best because whatever you do there is always going to be someone out there who is better, smarter and has already achieved the milestones that you are just beginning to plan for. This realization made me understand that there is no end to learning and making progress is a unique and individual journey - a journey that might be filled with more rejections/failures than successes - which makes it all the more worthwhile.

> ***There is always a first, even to rejections!***

My first rejection was a personal one, from a friend I considered very dear. We went home together, we sat together, we ate together, and did everything together. When our friendship broke apart, it broke my confidence. I share a great rapport with that friend today, but back then dealing with losing a friend that close was new and simply heartbreaking.

But with time, you realize that it's part of growing up. I met new people in due time, one of whom I connected with because of our mutual understanding of personal rejections. I made another friend through a Python workshop on PyRobots, I attended at the Incubation Center of our University.

> ***The support I got from my personal connections gave me the strength to work on myself and my personal brand.***

As the first year ended, students had to do a two-month internship as part of the curriculum. For the same, I joined the ACM Summer Workshop under the guidance of Dr. Rishabh Kaushal, and no doubt, my experience there gyrated my interest to the field of Machine Learning. In this workshop, I worked on a project for which I teamed up with one of the Ph.D. scholars' at my university. Through this connection, I was recommended for an international research internship opportunity with Nara Institute of Science and Technology, Japan (with whom IGDTUW has signed an MoU that allows both universities to have a provision for student and faculty exchange along with the bilateral research opportunities, opportunities for international internships for students and joint international conferences) under Prof. Nakamura Satoshi with the research area being 'Speech to Text for Indian Languages'. For the application process, I submitted an initial research proposal consisting majorly of a brief examination of the problem statement, proposed methodology and the results I hoped to achieve, quantitatively along with references I aim to use for my research. I had also tried to draft the proposal from the perspective of my past experience in the field of ML and AI.

Simultaneously, I became a core member of Instinct-Life skills, Peer Educators Society and ACM IGDTUW Student Chapter in which I worked closely again with Dr. Rishabh Kaushal. Working with him taught me a lot of things – efficiency, accuracy, how to bring perfection to your work, and a lot of things that changed my personality a lot. On a personal level, I learned a lot in my first year itself. So much so that I already kickstarted working on several research publications (some of which are still underway) thanks to the research based projects, I had developed as a result of attending several workshops and bootcamps. One of my publications is titled, 'Public reactions towards Covid-19 vaccination through twitter before and after the second wave in India' that is based on 'Social Network Analysis and Mining' and is published on Springer. Me and my team always try to go for scopus-indexed journals since they offer a better impact and sharing value to the scholarly work.

Having said that, my second year at university was tumultuous for me. In my second semester, I joined a course on Data Structures at Coding Blocks on my senior's advice. But I was not able to complete it. I blame the pandemic, the classes became online, and my concentration level dwindled - an issue that many students faced in those times. I was not able to pick DSA up again until the end of the third semester, with the placement season looming close by.
Even though I couldn't complete the course, for the sole purpose of networking, I joined the Campus Ambassador Program at Coding Blocks, and to my surprise within the first three months of joining I started getting enough money for my own small everyday expenses. This program helped me network with a lot of people, who later became my mentors as well. Not to mention, the selection process was as simple as filling out a form followed by a small telephonic interview.
Throughout my college journey, I have been a part of a lot of Campus Ambassador Programs partly because I loved the concept of helping my peers learn better by providing them with the right resources, and partly because they became a good source of passive income. Subsequently, I joined the Campus Ambassador program at Coding Ninjas, Zuno, and Coding Minutes too. The process for Coding Ninjas was the same as it was for Coding Blocks and for Zuno.

> ***"For Coding Minutes, with my reputation preceding me and due to the connections I had in the community, I was asked to join directly. "Such is the power of networking, you see!"***

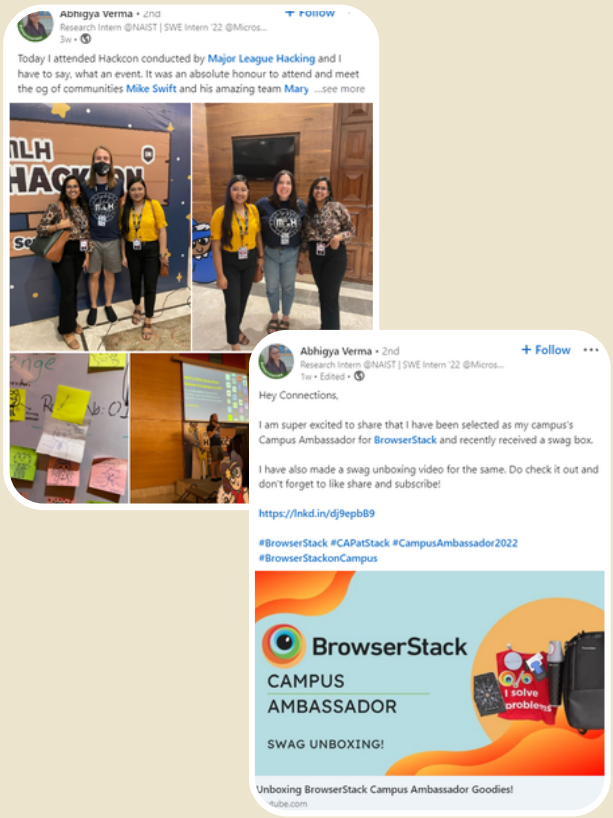
In Oct-Nov 2019, the OSA Student Chapter was organizing a seminar at the University and I joined as a student volunteer. As part of the organizing committee, I got introduced to the President of the society (who was also a senior) and was able to build a great rapport with her. In May 2021, she got in touch with me again, inviting me to collaborate with her to complete a research paper - which was in Phase 2 of its lifecycle. The Phase 1 for the same, that included most of the foundational groundwork, was already completed. She approached me along with a few others, and that is how I wrote my research paper which recently got published in the SNAM Journal of Springer.

> *In the third semester, I again got a big rejection and that too from Google.*

I was not able to crack the Google STEP internship program which fed one of my biggest fears - that I would remain unplaced at the placement drive. I worked on solving DSA problems rigorously in January 2021 and although I was extremely disappointed, one thing that I never stopped doing was hard work. April 2021, during the second wave of Covid, my mother and I both got sick. At the same time, I started receiving rejections from various places, including Flipkart Runway, MLSA, Github Campus Expert, and from organizations that I applied at for internships. The isolation from quarantine coupled with the so many rejections made me feel almost depressed. I had lost my appetite, and I couldn't sleep at night.

All this came to an end with my selection in Microsoft Engage in May 2021. I finally had my chance and I wanted to prove myself. I also managed to bag an internship as a Teaching Assistant at the ACM Summer workshop as it was necessary according to the curriculum. At the same time, I was also able to crack the Microsoft Learn Student Ambassador Program. Things were finally looking like they were back on track. I got an opportunity at the end of Engage mentorship to interview for a Summer Internship at Microsoft as well.

My interview didn't go too well, so much so that I felt that there was a 90% chance that I wouldn't get the offer, but I did! With the commencement of the third year, everything started falling into place. I was now a core member of GDSC IGDTUW too as an outreach Lead. I had gotten an internship offer from Microsoft and I was now pretty much stable overall.



Today when I write this article, reliving all the happy, stressful, and sad moments, I just want to convey to all the readers reading this today to enjoy the journey, because life is a marathon not a race and to become the best version of yourself you will have to keep hustling on.

ABOUT THE AUTHOR

A final year student at IGDTUW pursuing B.Tech in Information Technology. She was a SWE Intern'22 at Microsoft. She is currently a research intern at NAIST. She is also a Gold Microsoft Learn Student Ambassador along with being an avid problem solver and multitasker with a keen interest in technology and management innovations. She is the founder of Celestial Biscuit, a development club at IGDTUW. She also has a YouTube Channel with more than 1.2K subscribers.

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Steer your career into Data Science

with Maulishree Gupta

Unlike many of my peers, I didn't have a plan.
I completed my undergrad in Electronics and Communication Engineering from IGDTUW in 2019, post which I was hired by Wabtec Corporations (GE at the time) as a part of their Leadership Expertise and Accelerated Development (LEAD Program). This program, I must say, was a game changer for me because it gave me an opportunity to truly explore my interests.
If you're anything like me, a person who was initially very confused about the direction she wants to steer her career to, such job rotation programs give you an opportunity to try different fields with low risk. While I was an ECE grad, I pivoted to more on the software side since it piqued my interest more. For a span of two years, I moved across four different software teams where I took the role of DevOps Engineer, Data Engineer, Technical Product Manager (TPM), and Artificial Intelligence Engineer. At the time, my choices seemed haphazard and all over the place, since I only tried the teams which seemed most promising at the time. However, in hindsight, my choices led me to experience the different tech stacks and aspects of software development through this rotation program.

Initially, I worked as a TPM. I understood the importance of clearly defining the "what" of problem statements. Next, I worked as a data engineer that helped me implement a lot of these requirements, whereas as a DevOps Engineer I could appreciate the maintenance and monitoring of the software we build. A combination of all of this was cumulatively made up for a majority of my job responsibilities as an AI engineer. While there was a steep learning curve when I began developing CV algorithms, I realised I could utilize skills learnt from my previous roles for designing architecture for the purpose of integrating it to some of our existing products.

> *My key takeaway from all these transitions was to be open to learning new things and giving a shot to opportunities which may otherwise feel intimidating.*

I had bare minimum exposure to AI/Data Science in my Bachelors, wherein I had attended a workshop or two to get some ideas. My first formal interaction with AI came when I worked as an AI Engineer as part of the rotation program. I worked on a Computer Vision project, which exposed me to the field's various possibilities.

> *Reading through research papers regularly as a part of the job made me realize the importance of academia in the growth of this field.*

I also started going through some of the popular courses available out there such as Andrew NG's Machine Learning courses, Udemy courses, among others which further whetted my desire to study this field more systematically. My major learnings came when I joined the MS in Statistics program at University of Illinois Urbana-Champaign (UIUC) after being employed with Wabtec Corporation for slightly more than 2 years.

For the application process of the same, you would need the following -

- The Graduate Record Examination (GRE)
- Letters of Recommendations
- Transcripts/Academic Records
- Statement of Purpose
- Resume/CV
- English Proficiency Tests

For more information, you can refer to application guidelines and courses offered by UIUC on their official website.

I personally believe SOP is the most crucial part of the application because it gives you an opportunity to show who you really are and justify your intent. For instance, if you look at my background, I had been all over the place, without really sticking to one field. And, this is the point I tried to portray as my strength. I touched upon the basic pillars of Data Science and talked about how I had been honing my skills to become proficient at them. Those pillars are Computer Science, Statistics, Business knowledge and Communication. Having gained some exposure in each of these, I had realized gaining proficiency in a foundational subject such as Statistics would be the hardest to achieve for me while working full time. Upon talking to seniors, and going through the course lists, I realized I would benefit most by going ahead with this degree.

Similarly with CS programs at UIUC, many of the ML courses are offered both by Statistics and CS departments. In Stats, the focus is more on the fundamental concepts and programming is often done in R since it offers more analytical capabilities. In contrast, the CS department courses are done in Python and from what I have observed, they do a better job of following best coding practices. That being said, the fundamentals for algorithms remain the same, and students are allowed to take classes from each other's departments as well. Apart from this, both departments have their own set of courses, where Stats has more math intensive courses and CS covers more software aspects. It is always a good idea to go through the course lists to see what sparks your interest more.

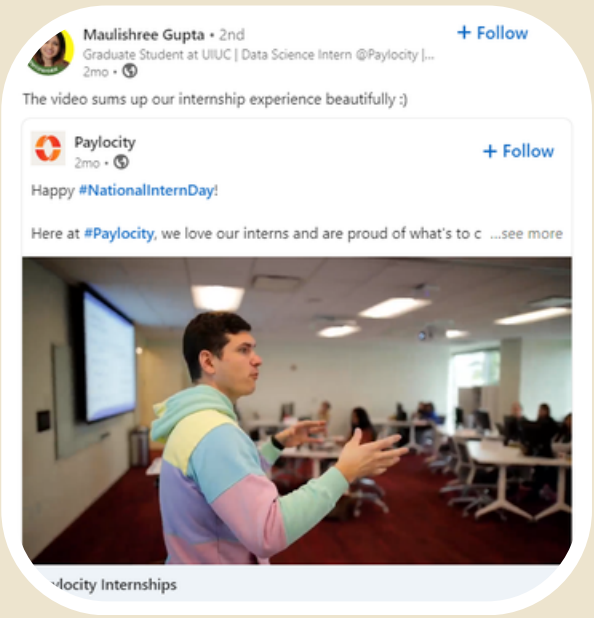
Having mentioned that, even though I had some experience as an AI engineer, I must say that I only dedicatedly developed my skill set in Data Science through the projects and courses that I took for my Master's degree. I customized my CV and portfolio during this time as well and began applying for internships and soon got a call from Paylocity, which is a company specializing in software products revolving around automation and data-driven insight mapping among others.

My interview at Paylocity consisted of 5 rounds of interview:

- Round 1: Technical interview based on past project + SQL questions
- Round 2: 8 hours take home data science challenge.
- Round 3: Technical round consisting of a take home challenge
- Round 4: A follow-up round with product owner discussing the take home challenge
- Round 5: Managerial round

Since the roles in data science are of diverse nature, different companies expect different skill sets which make the process a bit more challenging when it comes to interview preparation. I will discuss the basic pillars of it but beware that it is building expertise in these topics that is time consuming. Companies are known to repeat patterns in their interview process, so usually looking at Glassdoor or similar websites helps with the preparation as we.

> ***A pro tip : Many companies tend to give Datasets, similar to the ones on Kaggle, so it is worthwhile to spend time getting comfortable solving those.***



The interesting thing about Paylocity's tech team is that they were remote even before the pandemic. So, they have pretty much cracked the code to being productive remotely. The work is engaging, I contribute to the team's code base, thus, helping avoid any silos that may get created on working alone. I am currently working on NLP projects, which involve playing around with the text that the users of the company's product generate. The work culture is quite positive as well, but what strikes out the most with me is the versatility of what I do as a Data Science intern. Everyday brings forth with it a new challenge and along with it new learnings.
The field of DS is vast, and that is what makes it exciting and challenging at the same time. So, even if you don't have a plan initially or even experience, as long as you're ready to learn continuously, you will be able to steer your career into DS, if you so wish!

ABOUT THE AUTHOR

Maulishree Gupta is an IGDTUW alumni. She graduated in 2019 with a degree in BTech (ECE branch) after which she worked with Wabtec Corporation for 2 years. Presently, she is a student at University of Illinois Urbana-Champaign and is pursuing MS in statistics. Her interest areas include data analytics and engineering leadership and innovation management.

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Off-campus Placements & Everything In Between

with Himanshu Kataria

The placement season is a long-awaited and most-dreaded phase of a student's life. Most of us are able to crack offers from great companies but some of us aren't. There are always those students who were not able to get a good offer or weren't satisfied with the offer they landed up with. Perhaps the TNP policy made it so that they couldn't appear for any other companies that they would have preferred more. Here is where off-campus opportunities can be a life-saver!

But, cracking off-campus opportunities is tough. Openings for freshers are less, many companies don't even hire off-campus and for those who do, even getting your resume shortlisted proves to be a monumental feat that only a few can manage. Yet, it's not impossible. With the right preparation and some guidance, you can make yourself stand out just like I did.

> *When I initially began my preparation, I faced the dilemma many students face - which programming language to learn?*

Many suggested learning Java since it is used in industries or even Python. The simple answer to that is, leaving some exceptions, it does not matter at all. I'll suggest picking any language of your choice that is widely accepted in interviews such as C++, Java, or Python. I don't suggest C programming language for preparation for a bunch of reasons. C is a great language to learn if you're just starting out but it makes the implementation of algorithms and data structures quite tedious as compared to the alternatives I just mentioned.

For example, if you want to implement **BFS** you need a **queue**, it's not a great idea to write the code for a **queue** from scratch first and then implement **BFS**. **Languages like C++, Java and Python have inbuilt libraries that can make you code faster**, giving you more time to actually explain the logic behind your code to the interviewer, which is what he or she is looking for.

If you pick Scala, Ruby, or Rust, which are extremely powerful programming languages, they might not give you any edge and even be disadvantageous when it comes to interviews as they are not accepted and won't align with the expectations interviewers have. DSA is a must for most companies, startups prefer Development skills.

Talking a bit more about DSA preparation, I began studying DSA in semester II. **My most preferred references included Youtube channels such as mycodeschool and Abdul Bari's courses on Data Structures and Algorithms** - which might not be too interview-oriented but helps you clear the fundamental concepts theoretically. For me personally, It was very hard to digest technical concepts at first, I used the pen-paper method to visualize the steps until I understood the logic.

> *You can get practically all learning resources for free on the Internet.*

By the end of second year, I had started competitive programming on Codechef. I achieved a mark of 2 stars, then stopped. Like many of you reading this article, I was never really too interested in CP. I kept picking it up on and off yet I never crossed my 2-star rating.

Competitive Programming a.k.a CP will boost your confidence, no matter what your rating is. For clearing online assessments CP is not required but again it helps a lot, as companies are increasing difficulty for off-campus drives year-by-year.

OA are there to filter and shortlist students. If you're not able to clear online assessments, don't take it too hard on yourself, let it go, and prepare for the next. If you can't seem to develop an interest in CP, know that it is a very common notion to feel among engineers. CP isn't important for placements but having a good rating on platforms like Codechef, Leetcode, etc gives you an edge in off-campus placements for sure. **Another resource I highly recommend for DSA is Pepcoding's Level 1 playlist.** It is free and would give you an overall idea about DSA. **You can refer to Aditya Verma's YouTube channel for more quality content on the same.**

Furthermore, to increase your chances of selection from the pile of resumes that recruiters go through for off campus placements, make sure to add at least 3 projects to your resume in the order of hard, medium, and easy difficulty. **You will find amazing projects on YouTube channels like JavaScript Mastery.** In order to categorize, adopt the design perspective. For example, building a simple to-do list app comes under the category of "easy" projects whereas building a chatbot application comes under the category of "hard" projects because the system design for the latter is more complex than the former. It doesn't matter if your project is based upon Machine Learning, Mobile Development, or Web Development if you are able to justify them well in the interview.

My preparation consisted of much of the same mentioned above. I was also active on LinkedIn and made a habit of following HRs, recruiters and employees of various companies that I felt I could ask for referrals from. Check career pages of the companies frequently, and always try to get referrals. In case you weren't able to arrange for one, apply directly. I got to know about Hashedin's off campus recruitment for freshers through a LinkedIn form which was being circulated by HRs and many employees of the company as well. I customized my resume with regards to the job description and received an email within weeks that I had been shortlisted. I began reading interview experiences of students who previously interned with HashedIn on GeeksforGeeks to understand the pattern of their interview process. GFG has archives for companies ranging from Google to TCS that consist of interview experiences of thousands of candidates (both rejected or accepted).

But, don't limit yourself to Google or Amazon, there are many companies out there that pay well to freshers and have great tech stacks. Working in a company that has a widely used tech stack would open more doors for you in the future.

For Hashedin particularly the interview process consisted of total 4 rounds :-

- Online Assessment
- Technical Interview 1
- Technical Interview 2
- HR

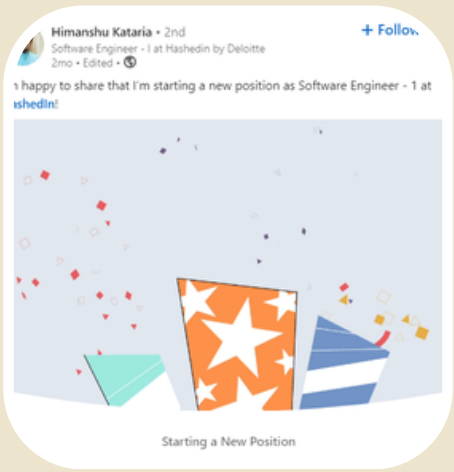
In **Online Assessment**, the questions were randomized. After the OA, I got to know that several test-takers got Graph and Dynamic Programming questions while some got Hashing, Arrays, or String-based questions. So, it is important to cover all data structures at least once.

In **Technical Interview 1**, the Interviewer asked me two Dynamic Programming problems. The first one was a variation of the Longest Common Subsequence problem. He asked me some questions from core subjects as well. It is crucial to develop an understanding of the patterns in coding problems. I didn't solve many coding questions during my preparation but I understood the patterns and knew the basics of data structures.

Technical Interview 2 was a mix of programming and design questions. I was given a preference and opted for Java as my primary language. We started off with basic programming questions. He also asked me a question on the algorithm paradigm in context of solving a rubix cube. We then discussed the data structure I would use for the same along with time and space complexity. The purpose of these questions (Rubix Cube) is to check your thinking ability and problem solving ability. For system design, the interviewer asked me to design Instagram's Database and I was later asked SQL queries for the same.

And finally in the **HR round**, I was asked behavioral questions. These tend to be repetitive so you can prepare well in advance by researching about the company and inculcating the same in your answers.

For women-in-tech especially, many tech giants have female-only hiring drives. **There are many programs/initiatives as well like Walmart CodewithHer , Amazon Wow, Adobe SheCodes, Thoughtworks Women Who Code which can be a golden ticket for many female to-be engineers.**
It's always a good idea to join more student communities and telegram channels that provide regular updates on these.



Searching and applying for off-campus jobs can seem like a surreal task and you might have to submit many job applications before you finally get an interview call but it's a rewarding one. Remember when it comes to off campus jobs, you need only one among all the jobs you are applying for.

Trust the process, prioritize your health above all and don't let the rejections overwhelm you.

ABOUT THE AUTHOR

Himanshu Kataria has a degree in B.Tech from Hindustan College of Science and Technology. He has previously worked with Brightern. He is a 3-star coder on Codechef and is currently employed with HashedIn as an SDE-I. As a volunteer during his college days, he actively educated students on healthy coding practices among others.

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POETIC MUSINGS

Impact

My mom says I am on my computer a lot
How do I tell her
That's all I have ever known
I'm bilingual
I know binary very well
Maybe I'll be the next Sheldon Cooper
I want to be, but physics is not my forte
I'll be designing all day
But ones and zeros
Hoping it makes an impact one day

POEM BY
KHYATI
(B.ARCH, 2021-2025)

Light of Hope

I am trembling with fear
That's how dark it is in here
My hope arouses, my strength combines
As I see the morning armor
A light that finds its way inside
Terrible fears are whispered yet I didn't fight

I wait for the rays to show
To blow the weight off the cover
You are not just light
You are hope, motivation, a thunder to conquer

A light to rise, in shadow and in life,
I'll follow you
I'll always be on your side

POEM BY
ANUSHKA
(B.TECH CSE, 2020-2024)

POETIC MUSINGS

EVER WONDERED?

Ever wondered how the sky works?
Ever wondered how the thunder shuts?
How miracles come true, how rainbows pull over?
Ever wondered how blessings shower?

Sitting in the corner, lost in the wander
I realized importance of colors
Followed my gut and wrote a letter
Analyzing the misery, finding myself better

Ever wondered how the lights work?
Ever wondered how the stars lurk?
Beautiful faces, struggling tales
Ever wondered how dreams turn pale?

I wonder how magical smiles are
Just comes and pour all the glow
I wonder how far one can go
Not to be found, just to flow

RAINDROPS

Sitting by the window
Running through my thoughts
Flowing with the winds
How cool it is to be lost

A plate full of spicy fritters in one hand
With the other being busy in finding the lane
Rain drops are falling across my fingers
Like someone crosses the soul of thunders
I wish to write
Write how painful it is to fall
Write how soothing it is to bear the fate of all

A drop fell on my dry skin
Making me alive once again
Letting you pour and heal
I will just dance with zeal
One can hear the sound of the pulse
For rain always skips the false

POEMS BY
ANUSHKA
(B.TECH CSE, 2020-2024)

POETIC MUSINGS

पतंग

मैं पतंग हूँ, पतंग जो बारिश में उड़ना चाहती हैं। अजीब हैं ना? मुझे आसमां से रंग उधार लेने हैं, मौसम की मस्ती से बहार लेने हैं। उड़ते उड़ते गिरना है मुझे, मिट्टी कि खुशबू से जीनत -ए-बुखार लेना हैं।

फिर मैं भी उड्डुगी उस गुलज़ार में, हवा से बातें करूगीं, सितारों पे काव्य रचुर्गी, वही किसी बादल को घर कर, अपने ही अस्तीतव पर सवाल करूगीं, खामोशी में सुकून का आगाज़ करूगीं ।

मैं पतंग हूँ, मैं आजाद हूँ, मुझे नहीं जानना कुछ और, मुझे बस उड़ते चले जाना हैं। मगर हैं कोई डोर जो खिच रही हैं अपनी ओर, कभी तनाव हलका हैं, कभी जोर, अरे जाने दो मुझे, गिरने दो, संभलने दो, उड़ान भरने दो। फिर चाहे मैं कट कर गिर ही क्यूँ न जाऊ, वो उड़ान, वो उड़ान मेरी अपनी होगी।

तो क्या हुआ अगर गिर भी गई, मेरे चाहने वाले अब भी बहुत हैं, आसमां को चुमने की चाहत बहुत हैं। मैं पतंग हूँ, पतंग जो बारिश में उड़ना चाहती हैं।

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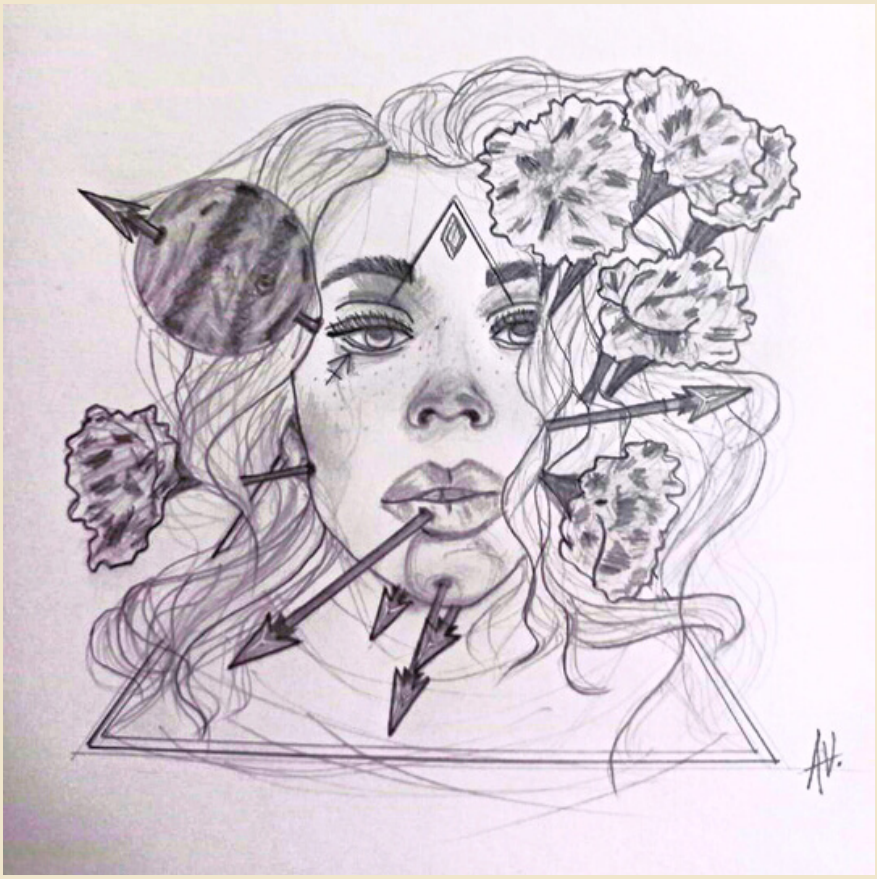
मेरा किरदार

चार किनारो से गहरा मेरा ये किरदार,
आओ तुम्हे सैर कराउ सुण्ये के पार।।
सुण्ये से उभरा हु,
सुण्ये में जा मिलूंगा,
पर अभी हु यहाँ ,
तोह सुण्ये से आगे का रास्ता तय करूँगा।।

मेरा किरदार उलझा है, मैं सुलझा हु,
चार किनारो से आगे भी मैं,
एक अस्तित्व गहरा हु।।
मैं गिरता हु, उठता हु,
अपनी गाथा खुद ही रचता हु ,
लकीरें है हाथों पर मेरे भी,
मगर रंजिशों में मैं कहा रहता हु।।

मेरी कहानी कुछ और है,
चार किनारो से आगे भी एक दौड़ है,
मैं अँधेरे में बढ़ता हु,
सुण्ये से आगे की सीमा पर लिखता हु।।
चार किनारो से गहरा मेरा ये किरदार,
आओ तुम्हे सैर कराउ सुण्ये के पार।।

THE CREATIVE COLLECTIVE



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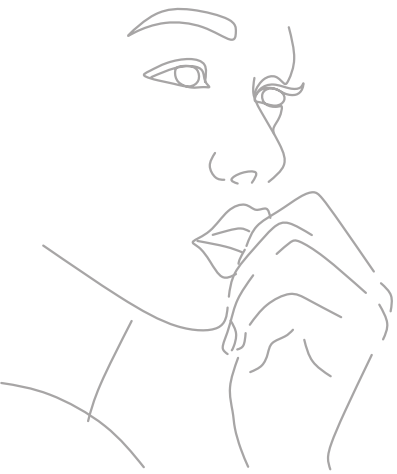

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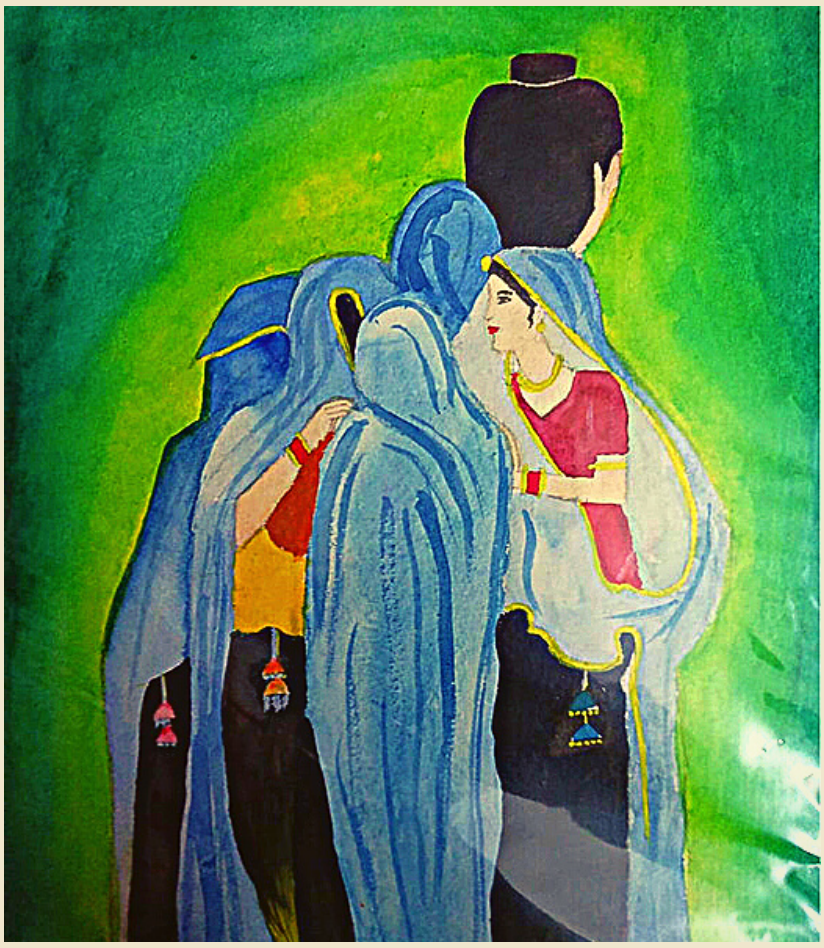

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