YATHARTH GOSWAMI
Computer Science & Engineering
Indian Institute of Technology Kanpur

191178
UG Second Year (B.Tech.)
Male
DOB: 06/10/2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Kanpur	IIT Kanpur	2020	9.8
Intermediate/+2	HSC	Alpha Junior College, Mumbai	2019	90.31
Matriculation	Board of Sec. Education, Rajasthan	SMJT Senior Sec. School, Bikaner	2017	93.67

Pursuing **Honors** in Computer Science and Engineering

Interests

Blockchains, Quantum Algorithms, Reverse Engineering, Cryptography, NLP, Graphs, Algorithms, Singing

Academic Achievements

- Secured **All India Rank 110** in **JEE Advanced 2019** among 2.3 Lakh eligible aspirants *(2019)*
- Secured **All India Rank 448** in **JEE Mains 2019** among 11,57,125 candidates *(2019)*
- **Academic Excellence Award** for exceptional performance in Academics at IIT Kanpur *(2019)*
- Recipient of prestigious **KVPY fellowship** by Dept. of Science and Technology, Govt. of India *(2018,2019)*
- Recipient of Annual Scholarship under **State Talent Search Examination** scheme (STSE). *(2017)*
- Received **Gold Medal** and **Certificate of Merit** for being in the national top 42 candidates at INChO *(2019)*
- Amongst the **top 1%** students across the nation in NSEA who were selected to appear for INAO *(2019)*
- Secured perfect **10.0/10.0** grade points in all courses in the autumn semester of the freshman year *(2019)*

Key Projects

IITK Bucks *Code Here*
Summer 2020
Institute Summer Project — *IIT Kanpur*

- Implemented a **Fully Functional** Node using NodeJS.
- Learned about the basics of the functioning of **Blockchains** and **Crypto-Currencies** and Cryptographic techniques like asymmetric cryptography to make **anonymous** transactions through assignments. ***Code Here***
- Learned about Programming Concepts specific to **JavaScript** like **Asynchronous Functions** and **Event Loops**.
- Learned about **Tunneling Softwares** like **ngrok** and used them to test the nodes.
- Implemented the **Miner** using the concepts of **Multithreading** in NodeJS.

Private Computation Using Cryptographic Primitives *Code Here*
Summer 2020
Institute Summer Project — *IIT Kanpur*

- Implemented **Distributed Point Function (DPF) library** using the principles of **Function Secret Sharing (FSS)** in Rust Programming Language.
- Learned about various Cryptographic Primitives used for **Private Computation** like **Function Secret Sharing** (FSS), **Fully Homomorphic Encryption** (FHE), **Yao's Garbled Circuits** (GC) and **Shamir's Secret Sharing**.
- Learned about **Multithreading, Memory Optimizations, Ownership Laws** in Rust Programming Language.
- Used various libraries like **gtest, grpc, google/benchmark** for making Tests and Benchmarking code for the DPF library.

InfoSec IITK
Jan2020-April2020
Association of Computing Activities, IITK — *IIT Kanpur*

- Learned about techniques like **SQL injections, CSRF attacks, XSS attacks, Binary exploitation, Reverse Engineering** and **Steganography** and tried hands on various sandboxes and crackmes along the way.
- Learned about **Assembly Language** for **Reverse Engineering Challenges** and how the program actually runs under the hood by studying the use of **Registers** and **Function Stacks**.
- Took part in various **CTF Competitions** and tried some Old Competitions as part of practise.

Miscellaneous

HCL-C3i Hub Cybersecurity Hackathon *Code Here* *Jul2020-Aug2020*
Team Hackermen69

- Ranked **25th** out of around **3400** teams from all around the world.
- Built a **Deep Learning** based solution to distinguish Malicious DOS executables from Benign ones by studying the **PE** files provided.
- Built a **Deep Learning** based solution which would take input as Packets streamed from the network of a user in form of **Pcap** files and classifies if the Packet is a part of Botnet traffic or not.

Quantum Computing With Qiskit *Code Here* *Summer 2020*
Maths and Physics Club, IIT Bombay *IIT Bombay*

- Learned the basics of **Quantum Computation** and **Quantum Physics**.
- Successfully **Solved** all the Assignments and Modules which were provided during the workshop.
- Implemented various Quantum algorithms such as **Quantum Teleportation, Universality, Deutsch Josza Algorithm, Grover's Algorithm, IBM's BB84 Protocol** and **Quantum Fourier Transform** with IBM's **Qiskit**.
- Interacted with **Leading People and Professors** in the field through live webinars.

ChromeBot *Code Here* *Summer 2020*
Self Project

- Built a Chrome extension to provide interface of **Bot** which can perform some tasks through commands.
- Used **Javascript** and **Chrome API** to make a **Chatting Interface** that allows Bot to receive commands and act accordingly.
- Used the **Chrome.tabs** API to add the functionality of scraping a particular contest page on **Codeforces** and downloading the tasks along with sample inputs and outputs in different files and opening the **text editor** of their choice simultaneously by just typing a **keyword** in the bot chat box.
- Added the functionality telling the user about recent coding competitions and allowing user to set an **alarm** for a particular contest.

Technical Skills

Programming & Scripting Languages: C++, C, Python, JavaScript, Rust, Bash
Tools and Technologies: NumPy, Pandas, LaTeX , Cutter, IDA, Git, LibreCAD, Tensorflow, Keras, Markdown
Machine Learning: Classification, Neural Networks, CNN, RNN
Development: HTML, CSS, Bootstrap, JavaScript, NodeJS(Proficient), Django(Familier), PostgreSQL

Key Courses Undertaken

Computer Science	Fundamentals of Programming+Lab, Data Structures and Algorithms*, Mathematics for Computer Science-I*, Game Theory and Mechanism Design*
Mathematics and others	Real Analysis, Linear Algebra

(*) - To be completed by Nov 2020

Position of Responsibility

Secretary, Programming Club *May2020-Ongoing*
Programming Club, IIT Kanpur *IIT Kanpur*

- Helped in conduction of **Deep Learning Hackathons** on various domains and helping students by providing related materials.

Extracurriculars

- Successfully Completed around 40 hours of Classical Music Training under the Compulsory Cultural Activity (CCA), IIT Kanpur.
- Performed on various occassions like Independence Day, Institute Foundation Day and Republic Day as part of a group acting as vocalist.