

Vibhu Kapadia

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EDUCATION

Vellore Institute of Technology, Bhopal University, Bhopal, India.

Expected: July 2024

Candidate for Bachelor of Technology in Computer Science and Engineering with
Specialization in Cyber Security and Digital Forensics.

(CGPA: 8.89/10)

Alpha Junior College of Science and Commerce, Mumbai, India

July 2020

Secured *Distinction* in the Higher Secondary Certificate Examination.

(83.26%)

PROFESSIONAL EXPERIENCE

Indian Institutes of Science Education and Research, Bhopal, India

June 2023 – Present

Summer Intern – Department of Electrical Engineering and Computer Science

- Worked under Dr. Ankur Raina (IISER Bhopal) and Dr. Sujoy Bhowe (IIT Bombay).
- Studied the working of existing Minimum Weight Perfect Matching Algorithms to run on Toric codes for Quantum Error Correction
- Designed two dynamic algorithms using the elimination of the maximum weighted edge and the addition of the minimum weighted edge. Achieved a time complexity of $O(V)$ instead of the previous $O(V^3)$ with a constant cost overhead.

Gurugram Police Cyber Cell, Haryana, India

June 2021 – July 2021

Summer Intern

- Analyzed case studies of various cybercriminals and mapped out their modus operandi in a report.
- Identified that most cybercrimes did not use sophisticated attacks or advanced technology, and exploited the weakest link – humans.
- Outlined a strategy to increase awareness among the general public about cybercrimes and how to safeguard themselves from them.

ACADEMIC PROJECTS

Cerebremy – A Mental Health App

- Programmed a comprehensive and user-friendly application using Figma to track an individual's mental well-being.
- Researched extensively on the existing solutions to eliminate unused features and provide a streamlined interface.
- Technologies used: Figma, Flutter, Firebase, Dart, Android Development Studio
- Received the highest grade (S) in the course “Engineering Project in Community Service” in VIT Bhopal, Semester 6 (2023).

Abhinav Sanskrit Adhigam – A Sanskrit Learning App

- Designed a prototype of an innovative and efficient Sanskrit language learning application using Figma.
- Developed the prototype using Flutter and Firebase to reach Toycathon 2021 finals (among the top 200 teams in all categories) with 120,000 participants.
- Technologies used: Flutter, Dart, Android Development Studio

Data Auditing for Cloud-Aided Healthcare System

- Implemented Public and Private, Partial and Full Auditing of data stored in cloud infrastructure in Java.
- Utilized novel DNA cryptosystem for encryption of data and murmur hash algorithm to create the message digest.
- Stored the data in Hash Arrayed Tree to speed up the process of auditing.

Classical Cryptography Research

- Researched and analyzed 40+ research papers on the latest advancements in cryptography techniques.
- Compiled and analyzed the findings in a Literature Review and implemented 6 of those algorithms in Python.

TECHNICAL SKILLS

- Programming Languages: C/C++, Java, Python, Qiskit, Q#, Shell scripting, dart
- Software and Technologies: Jupyter Notebook, Matplotlib, Android Development Studio, Xcode, Git, Solidworks
- OS: Kali Linux

COURSES AND CERTIFICATIONS

- Quantum Winter School- The Coding School. (February 2023)
- Introduction to Quantum Computing: Quantum Algorithms and Qiskit- NPTEL. (August 2022)
- Fundamentals of Data Analytics- Analyttica. (August 2021)
- Artificial Intelligence Foundations- SkillUp. (July 2021)

EXTRACURRICULAR ACTIVITIES

- Acquired a second-place silver medal at the Marathon organized by the Health-O-Tech club at VIT Bhopal. (2023)
- Cleared one round of elimination in a singing competition at VIT Bhopal. (2021)
- Participated in Quantum Information Processing 2021 and interacted with peers and professionals in Quantum. (2021)