Asish Kumar Mandoi

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in Asish Mandoi   Indian Institute of Technology Kanpur   ⬡ AsishMandoi

EDUCATION

Year	Degree/Certificate	Institute	CPI/%
2019 - 2023	B.Tech in Electrical Engineering	Indian Institute of Technology Kanpur, India	7.33/10.0
2019	Grade XII (CBSE Board)	MBS Public School, Bhubaneswar, India	93.8%
2017	Grade X (CBSE Board)	DAV Public School, Bhubaneswar, India	10.0/10.0

PROJECTS & EXPERIENCES

Quantum Computing Mentorship Program[o]   *Oct '21 – Present*
Mentor: Dr. Vesselin G. Gueorguiev, Quantum Open Source Foundation   *QOSF ⬀*

- Among **40 out of 1000+** applicants to be selected for the program by solving an assessment task innovatively
- Recognized for developing **one of the best solutions** out of all submissions to the task by implementing **Quantum Search on Unstructured Data** using quantum loading and **Grover's algorithm**   *GitHub ⬀*
- Implemented optimal solutions for the **Travelling Salesman Problem** and the **Vehicle Routing Problem** by using various **optimization techniques** based on **Quantum Annealing** and Quantum Approximate Optimization Algorithm
- Compared the runtimes and accuracies of various optimization algorithms run on **Quantum Computers** (of fundamentally different architectures) as offered by **IBM** and **DWave**

IITK-Coin   *May '21 – Jul '21*
Backend of a pseudo-currency system to be used in the IITK campus | Programming Club, IIT Kanpur   *GitHub ⬀ , DockerHub ⬀*

- **Developed the backend** from the ground up using **Go** programming language and **SQLite** for database management
- **Secured** the endpoints by incorporating user authorization using **JWTs**, and built an **additional layer of protection against hacks** by employing the **Bcrypt** algorithm to **hash and salt passwords**
- Added a **transaction tracking** functionality for administrators and implemented an **OTP based confirmation system**
- **Increased server efficiency** by handling up to **300 concurrent transactions per second** by utilizing the **WAL** journal mode in SQLite and **Redis** for caching
- Containerized the application using **Docker** and made it **publicly accessible** on DockerHub

Crio Winter of Doing   *Jan '21 – Feb '21*
Externship program for developers | Crio.Do   *CWoD ⬀*

- Acquired familiarity in **HTTP, REST API, AWS, Linux, Git, HTML, CSS, JavaScript** by implementing related concepts
- **Launched an instance of Amazon EC2,** deployed the backend server of the QEats (dummy) android app, and connected the app to its backend server
- Sorted cities based on the popularity of the QEats android app by **analyzing 10k+ logs** using **Linux shell techniques**
- Deployed the frontend and the backend of my **Personal Portfolio ⬀** web application; Fetched my repository descriptions in **real-time** by **integrating** my **GitHub** account with this application
- Among the **final 1200 out of 10,000+** total applicants to clear the coding round and reach **Stage-2B**

Algorithms based on Maths   *Apr '21 – Jun '21*
Stamatics, IIT Kanpur

- Investigated and implemented algorithms like prime factorization, factorial calculation, and **polynomial hashing** in C++
- Improved working knowledge in **devising** and **optimizing approaches** to solve various mathematical and algebraic problems using **Number Theory and Programming** by actively participating in **competitive-programming contests**

TECHNICAL SKILLS

Programming Languages	C, C++, Python, Go, MATLAB, JavaScript
Web Technologies	Node.js, Express, HTML, CSS, PHP, MySQL, SQLite, Redis
Libraries/Frameworks	Qiskit, NumPy
Utilities	Linux shell utilities, Git, Docker, LaTeX

ACHIEVEMENTS & HONOURS

Programming Achievements

- **IBM Quantum Challenge:** Among 677 worldwide to complete the IBM Quantum Challenge Fall 2021 by solving problems in areas of finance, natural sciences, machine learning and optimization using **Quantum Computing**   *Badge ⬀*   *2021*
- **Google Kickstart: Globally ranked 1636, 1055, 976** in Round E 2021, Round D 2021, Round H 2020   *2020, 2021*
- **Facebook Hacker Cup: Globally ranked 1967, 2769** in Round-1 out of 34000+ total contestants   *2020, 2021*

Scholastic Achievements

- Secured **All India Rank 3592** in **JEE-Advanced** out of 220,000+ shortlisted candidates   *2019*
- Achieved **All India Rank 7480** in **JEE-Main** out of 0.9 million+ candidates   *2019*
- Among **National Top 300** to be selected for **Indian National Chemistry Olympiad ⬀** , HBCSE   *2019*
- Secured **All India Rank 322** in **KVPY ⬀** out of 50,000+ candidates and selected for **KVPY Fellowship** by Govt. of India, and IISc Bangalore, one of the most prestigious science scholarships in India   *2017*

RELEVANT COURSEWORK

Quantum Computing[i]	Data Structures and Algorithms[i]	Digital Electronics
Probability and Statistics	Intro to Machine Learning[i] ⬀	Language & Society

A*: grade for exceptional performance, [i]: informal, [o]: ongoing, [hyperlinked at appropriate places]