ROHIT PAI

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EDUCATION

Sardar Patel Institute of Technology, Mumbai *August 2018 - May 2022*
Bachelor of Technology in Computer Engineering *CGPA: 9.88/10*

PROFESSIONAL EXPERIENCE

Senior Analyst, Deutsche India Pvt. Ltd., Deutsche Bank Group *July 2022 - Present*

- Played a pivotal role in securing **internal wide area networks** by designing multiple POCs and creating a **custom OpenSSHv9** package for RedHat Enterprise Linux 7.
- Developed a **command-line tool** to provide **quantum-safe encryption** for internal applications using OpenSSL3, liboqs and oqs-provider.
- Helped design the bank's **Quantum Risk Assessment Framework** by incorporating and enhancing the methodologies of the industry standards.
- Patched over **200 vulnerabilities** in a Java-based legacy application.

Product Management Intern, Paygate India Pvt. Ltd. *January 2022 - July 2022*

- Risk Management Team: Assisted in finalizing the **features and pricing** of the novel system, creating the **Product Requirement Document** and testing the APIs of various external data feeds.
- International Projects Team: Contributed to **20+ modules** by documenting client requirements, designing wireframes, overseeing the development and testing, and showcasing the results to the stakeholders.

PUBLICATIONS

1. **Pai, R.**, Purohit, M., & Vinayakray-Jani, P. (2023). **Strengthening Deep-Learning-Based Malware Detection Models Against Adversarial Attacks**. In: Misra, R., et al. Advances in Data Science and Artificial Intelligence. ICDSAI 2022. Springer Proceedings in Mathematics & Statistics, vol 403. (pp. 203-219). Cham: Springer International Publishing. DOI
2. **Pai, R.**, Naik, A., Sandesara, H., & Dholay, S. (2022). **Vigila: Application for General Safety**. In: 2021 International Conference on Advances in Computing, Communication, and Control (ICAC3) (pp. 1-6). IEEE. DOI

PROJECTS

GAN-based Malware Detection Model (Team Size: 2) *May 2021 - December 2021*

- Developed a robust malware detection system utilizing **Autoencoders and GANs**, capable of identifying **11 distinct classes** of malware by leveraging the dataset of over **100,000 samples**.
- Outperformed conventional neural network models by achieving a precision of 84.1%, recall of 85.31%, F1 Score of 84.7% and a false positive rate of 4.49%

Vigila - A General Safety Application (Team Size: 3) *August 2020 - April 2021*

- Designed a **community-based** general safety application where **SOS messages** are sent to all users in a **100m radius** along with the emergency contacts, using Geofencing Technique, Flutter and Cloud Firestore. Project Link

Variational Quantum Eigensolver for 2-Qubit Systems (Solo) *September 2020*

- Obtained the **lowest eigenvalue** of a given 4 x 4 Hamiltonian Matrix using the Variational Quantum Eigensolver Algorithm using a Jupyter Notebook with Qiskit, Numpy, Scipy and Pandas. Project Link

Matching Engine Simulation for Brokers (Team Size: 10) *June 2020 - July 2020*

- Designed a matching engine for brokers that **matches buy and sell orders on the current market price** using Python, Flask, HTML, Bootstrap, JavaScript, JQuery and Ajax. Project Link

- Acted as the **SCRUM Master** and held daily **standup meetings** to keep track of the progress.

OneKey (Team Size: 3) *September 2019 - November 2019*

- Designed a **password and notes management system** using Android and Cloud Firestore which generates **random passwords**, **auto-fills passwords** and stores passwords and notes in an **encrypted** format. Project Link

TECHNICAL SKILLS

Languages	Python, Java, C, SQL, HTML, CSS
Frameworks	Flutter, Angular, Bootstrap
Databases	Cloud Firestore (Firebase), MySQL
Software & Tools	Qiskit, Git, GitHub, Android Studio, Jupyter Notebook

RELEVANT COURSEWORK

- Cryptography and System Security • Data Communication and Computer Networks
- Cyber Security and Digital Forensics • Theoretical Computer Science • Advanced Data Structures
- Design and Analysis of Algorithms • Operating Systems • Database Management Systems
- Distributed Systems • Artificial Intelligence and Soft Computing • Engineering and Applied Mathematics

UNIVERSITY SERVICE

Executive Head for Sports Committee, S.P.I.T. *December 2020 - May 2021*

- Organised a **Chess Tournament** with **30 participants**.
- Streamed the tournament live on **YouTube** and commentated on it for over **280 viewers**.
- Assisted the committee in **planning** and **organisation** of remaining events.

PR Head for IPL Auction event at the Oculus Fest, S.P.I.T. *October 2019 - February 2020*

- Attracted over **40 teams** to participate in this successful app-based event for cricket enthusiasts.

WORK FOR SOCIETY

- Completed **60+ hours** of volunteering under the **PlusYou** initiative of Deutsche Bank by assembling and distributing school kits for primary school students, creating awareness for children with developmental disabilities through a 55KM walk, and creating reusable paper bags. *(July 2022 - Present)*
- Completed **10+ hours** of community service under the **Abhyudaya Program** by coaching underprivileged 10th-grade students and solving their doubts. *(July 2019 - February 2020)*

CERTIFICATIONS

- Google Cloud Certified **Associate Cloud Engineer**
- **Qiskit Global Summer School 2023 - Quantum Excellence** by IBM
- **Data Structures and Problem Solving** by Suven Consultants & Technology Pvt. Ltd.
- **Angular 6** by Suven Consultants & Technology Pvt. Ltd.

ACHIEVEMENTS

- **94th out of 1320** teams at the Deloitte Hacky Holidays Competition. *(July 2021)*
- **18th out of 183** participants at the SANS South Asia Capture the Flag Competition. *(April 2021)*
- **Winner** of the **Code for Good** hackathon by JP Morgan and Chase. Designed a prototype for simplifying the **application process of government schemes** for the **labour class**. *(August 2020)*