Adarsh Liju Abraham

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Education

Bachelor of Technology, Computer Science *PES University | 2020 — 2024*
Relevant Coursework: Operating Systems, Computer Networks, Cloud Computing, Database Management Systems

Technical Skills

Programming Languages: Java, JavaScript, Python, C, C++, PHP, Shell (Bash), MySQL
Systems: Linux, SQL, Docker, Kernel Programming
Computer Fundamentals: DBMS, Operating Systems, OOPS, Web Development
Frameworks & Tools: Django, ReactJS, Git, AWS
Languages: Malayalam, Hindi, English (Fluent)

Research Publications

Enhancing Disaster Response: A Study on SDN-Integrated Alarm and Alert Systems Using Cooja Simulations
Published at NKCON 2023 (IEEE)

- Assessed SDN-integrated alarm systems using Cooja simulations to improve disaster response efficiency.
- Compared RPL and SDN protocols, proposing solutions for IoT network challenges.

ONOS SDN Framework: Assessing the Impact of Single and Multi-Controller Architectures on Network Efficiency
Published at SmartCom 2024 (Springer)

- Analyzed ONOS and Mininet in SDN, comparing single-controller and multi-controller architectures.
- Evaluated performance metrics like latency, throughput, scalability, and fault tolerance.

Leadership & Activities

- Mentored 50+ students as a key member of **HackerSpace Club**, organizing hackathons and guiding innovative projects.
- Led a team of 5 in a **capstone project**, managing timelines and fostering collaboration for successful implementation.

Technical Projects

Project Turtle   ○ GitHub

- Developed a shell script for streamlined installation of essential tools on Linux systems.
- Implemented error handling and rigorous compatibility testing across multiple distributions.

Yet Another Markdown Converter   ○ GitHub

- CLI tool to convert Markdown files to HTML with customizable theming and styling options.
- Designed for ease of use in terminal environments, enhancing workflow automation.

DoctorPres   ○ GitHub

- Developed a doctor prescription system using **Streamlit** and **MySQL**.
- Provided a secure, user-friendly interface for managing medical prescriptions.
- Implemented role-based access control and audit logging for enhanced security.

EnigmaCipher   ○ GitHub

- Created a modern cryptographic system inspired by the Enigma machine using Python.
- Combined historical cryptography with contemporary algorithms for secure messaging.
- Implemented comprehensive unit tests achieving 95% code coverage.

Professional Experience

Internships

Research Intern *CHIPS, Bengaluru* **May '22 — Jul '22**

- Conducted research on **Manycore RISC-V** architecture, focusing on parallel computing optimization.
- Evaluated various RISC-V architectures to identify optimal design features for high-performance computing.
- Benchmarked **OpenMP** and **MPI** implementations to derive performance insights.

Subject Matter Expert — Linux *PESU I/O (Paid), Bengaluru* **Jun '22 — Sep '23**

- Taught **Linux fundamentals** and command-line tools to 20+ students with 90% course completion rate.
- Conducted hands-on sessions on **kernel modules** and **system programming**.
- Led discussions on **FOSS** principles and Linux system concepts, fostering a learning community.

Developer & Analytics Intern *Caliper Business Pvt. Ltd. (Paid), Bengaluru* **Feb '24 — May '24**

- Developed backend infrastructure for a **planner application** using **Django**, reducing response time by 40%.
- Designed an intuitive **frontend interface** with **ReactJS**, improving user engagement by 25%.
- Integrated **AI models** for demand prediction, achieving 85% accuracy in forecasting and supply chain analytics.

Full Time Roles

Python Engineer *Caliper Business Pvt. Ltd., Bengaluru* **May '24 — Nov '24**

- Developed and maintained **REST APIs** using **Django** and **Django REST Framework**.
- Built scalable **Pandas-based APIs** processing 1M+ records daily for data analytics.
- Automated complex **Excel workflows**, reducing manual processing time by 70%.
- Optimized backend performance, reducing API response time by 60%.
- Scaled existing projects to support 5 new enterprise clients.

System Engineer *Twospoon, Bengaluru* **Nov '24 — Present**

- Developed highly scalable **Flask-based APIs** handling 100K+ daily requests for a **ReactJS** frontend.
- Architected and implemented **microservices** reducing deployment time by 40%.
- Designed and deployed **SNMP-based monitoring systems** achieving 99.9% uptime.
- Implemented comprehensive **automation solutions** reducing manual operations by 80%.

Final Year Project

Harnessing the Power of Blockchain in SDN for Distributed Applications

- Integrated blockchain with SDN to enhance security, reducing attack vectors by 60%.
- Developed an ONOS controller cluster achieving 95% availability.
- Evaluated performance metrics, identifying and mitigating 15 critical security vulnerabilities.

Additional Information

- Active contributor to open-source projects with 500+ GitHub contributions in the last year.
- Won first place in 3 national-level hackathons for innovative solutions in system design.
- Published technical articles on Medium with 10K+ monthly readers.
- Holds AWS Solutions Architect Associate certification.