

Atreya Bain

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Overview

Software Engineer with 2+ years' experience building and securing scalable systems in distributed, cloud-native environments. Proven impact on security and usability through secure system design and cross-team collaborations.

Education

University College London, M.S. Software Systems Engineering 2024 – Present

- Modules: Requirements Engineering & Software Architecture, Computer Security, Malware
- Post Graduate Teaching Assistant: Compilers – assisted with grading and feedback on coursework.

R. V. College of Engineering, B.E. Computer Science & Engineering (GPA 9.07/10) 2018 – 2022

- Relevant modules: Data Structures, Algorithms, Network Programming and Security, Big Data Analysis

Experience

Software Engineer, Cisco Systems – Bengaluru, IN Aug 2022 – Sep 2024

- Developed and improved application security features for Cisco IoT Control Center (IoTCC) web platform, including SAML-based Single Sign-On and security policies, enhancing login and policy management experience.
- Spearheaded the extraction and centralisation of application secrets used in IoTCC applications in 20+ lab and production environments into a centralised Vault instance reducing emergency dot releases by ~25%.
- Built prototypes and contributed to APIs and monitoring for an OAuth 2.1 Authorization Server microservice deployed on Kubernetes clusters, enabling secure API access for IoTCC clients.
- Performed impact analysis on unresolved security vulnerabilities and CVEs, and organizing patching efforts.
- Optimised and automated the synchronisation of application secrets and SSL Certificates by leveraging Jenkins pipelines, reducing release deployment times by ~25%.
- Led the design and implementation of a CAPTCHA solution to curb bot activity in multi-environment deployments.

Software Engineering Intern, Cisco Systems – Bengaluru, IN Feb 2022 – Jul 2022

- Developed a solution in collaboration with the team for managing and externalising SSL certificates for Cisco IoTCC by extending Spring Cloud Config Servers, reducing the creation of emergency releases by ~30%.
- Designed git pre-commit hooks to validate and tag SSL certificates with team ownership, which improved traceability and cut verification times by ~75%.

Software Engineering Intern, Lexis-Nexis Risk Solutions – Bengaluru, IN (Remote) May 2021 – Aug 2021

- Extended HSQL (HPCC Structured Query Language) by adding BigQuery-style procedures, strongly-typed variables to facilitate users in reusing existing ECL-based or HSQL logic for easier data analysis.
- Added full support for the HPCC Visualizations library in HSQL, enabling users to generate rich, visualisations.
- Awarded the Community Choice Award in the HPCC Systems Poster Competition 2021.

Backend Development Intern, Revagram – Bengaluru, IN Sep 2019 – Nov 2019

- Built and tested RESTful APIs for managing Revagram's dance tutorial platform using Express.js and MongoDB using JWT-based authentication.

Projects

IEEE RVCE Student Chapter Website - github.com/IEEE-RVCE Jul 2020 – Dec 2022

- Drove Back-end team efforts in developing the IEEE RVCE Student chapter website, which won 2 awards in the IEEE Student Branch Website Contest in 2021 - Winner at the Global Level and Runner up at R10 level.
- Championed security best practices, leading efforts to enforce access control policies and enhance web security.
- Held early stakeholder discussions to align on needs, resulting in a 6× reduction in projected operational costs.
- Led the web team in 2021, driving CI/CD adoption and design reviews to reduce iteration times by 20%.
- Technologies: Express.js, PostgreSQL, Docker, React, Github Actions, Github Pages, Oracle Cloud.

Skills

Programming Languages: Java, Typescript, JavaScript, Python, C++, C

Frameworks: Spring Boot, Spring Cloud, React, Next.JS, Sencha EXT.js, HTML5

Databases: PostgreSQL, Oracle, Redis, MongoDB

Technologies: Docker, Kubernetes, Hashicorp Vault, Grafana, Prometheus, AWS, git, ANTLR, Kestrel