

Atreya Bain

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Overview

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

Education

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

- Modules: Software Development, Requirements Engineering & Software Architecture, Computer Security

- Post Graduate Teaching Assistant: Compilers – assisted with grading and feedback on coursework.

R. V. College of Engineering, B.E. Computer Science & Engineering 2018 – 2022

- GPA: 9.07/10
- Relevant modules: Data Structures, Algorithms, Object-Oriented Programming, Big Data Analysis, Network Programming and Security, Computer Networks, Web Technologies, Compilers

Experience

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

- Developed and enhanced full-stack application features for Cisco IoT Control Center (IoTCC), including Single Sign-On using SAML and security policy management, simplifying login and policy management for clients.
- Built APIs and observability integrations for a Spring Boot-based OAuth 2.1 Authorization Server microservice deployed on Kubernetes clusters, enabling secure API access for IoTCC clients.
- Led the design and implementation of a CAPTCHA solution to curb bot activity in multi-environment deployments.
- Optimised and automated the synchronisation of application secrets and SSL Certificates by leveraging Jenkins pipelines, reducing release deployment times by ~25%.
- Spearheaded the migration of application secrets used in IoTCC applications in 20+ lab and production environments into a centralised Vault instance, reducing emergency dot releases by ~25%.

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

- Developed and deployed a solution 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%.

Spring Intern, Lexis-Nexis Risk Solutions – Atlanta, US (Remote) May 2021 – Aug 2021

- Extended the HSQL (HPCC Structured query language) web compiler and extension by adding APIs to report autocomplete data, allowing for user auto-completion while writing HSQL in VSCode.
- Introduced strongly-typed variables and BigQuery-style procedures to facilitate users in reusing existing ECL-based or HSQL logic.
- Added full support for the ECL Visualizations library in HSQL, enabling users to create 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.

Projects

- Estree Visualize** - github.com/chrisvrose/estree-visualize Jul 2025 - Present
- Developed a utility web application to parse JavaScript modules and interact with their ASTs graphically, aiding in JS code exploration and analysis.
 - Integrated CI/CD using Github Actions and Github Pages to allow quick iterations.
- Vitals Recorder** - github.com/chrisvrose/bdrec Jun 2025
- Created a React Progressive Web App (PWA) that allows users to self-log their vitals such as Temperature and Blood Pressure when they are unwell.
 - Integrated storage backed by IndexedDB which enables complete local offline functionality.
- 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.
 - Collaborated in early stakeholder discussions to align on needs, creating a 6× reduction in projected operational costs.
 - Designed, implemented and documented RESTful APIs for consumption for the website UI.
 - Containerized and deployed backend on OCI, ensuring cloud-agnostic deployability and scalability.
 - Led the web team in 2021, driving CI adoption and design reviews to reduce iteration times by 20%.
 - Technologies: Express.js, PostgreSQL, Docker, React, Github Actions, Github Pages, Oracle Cloud.
- Couscous – Distributed filesystem** - github.com/chrisvrose/couscous-next Nov 2020 – Dec 2020
- Implemented a distributed filesystem backed by MongoDB clusters, with 100% POSIX compatibility.
 - Enabled fine-grained access control by implementing POSIX ACLs with native user/group support, managed centrally through the control plane.
 - Co-designed JavaScript-based FUSE driver to natively mount the filesystem, backed by RESTful APIs providing robust chunked read-write capabilities.
 - Technologies: Next.JS, MongoDB, fuse-native.
- HSQL - HPCC Structured Query Language** - github.com/hpcc-systems/hsql Jan 2020 – Jul 2020
- Designed HSQL – a SQL-like language offering an easy-to-use interface data analysts familiar with SQL to get started HPCC Systems quickly.
 - Created a web-based compiler with an ANTLR-based frontend, emitting ECL code.
 - Benchmarked HSQL to require ~20% fewer statements than equivalent ECL code for common data workflows, improving developer productivity.
 - Implemented a VSCode extension for supporting development in HPCC Systems clusters with HSQL, allowing in-IDE syntax highlighting and syntax checking.
- Projectile Tracking using Filters** Oct 2020 - Dec 2020
- Implemented and evaluated projectile tracking algorithms based on sensor inputs in Java and C++.
 - Spearheaded designing interactive UIs to plot sensor input and compare projectile tracking accuracy.
- ## Skills
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- 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, OCI, git, ANTLR, Kestrel
- General:** Web Development, Distributed Systems, Networks, Security, Compilers, Data Structures