

# KARAN AULAKH

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## PROFESSIONAL EXPERIENCE

**Workday, *Software Engineer***, Boulder, CO  
*Core services - Distributed Systems Engineer*

**Sep 2023 - Present**  
*Nov 2024 - Present*

- Helped accelerate large-scale workflows by 10× and powered ~21M daily instances (5% of Workday execution) by designing and maintaining Alpine, a distributed Java transpilation and execution engine
- Diagnosed complex mismatches across a 100+-frame distributed stack by extracting failing cases from millions of log lines and performing rigorous frame-by-frame analysis
- Reduced false positives from 20% to near zero by enhancing the AlpineDiffTool with grammar-aware comparison, set-ordering tolerance, and deterministic frame-by-frame analysis
- Improved observability and reduced triage time by building and deploying a runtime metrics platform in Java and Grafana, enabling detailed performance diagnostics across distributed systems
- Built and maintained TeamCity-based integration test pipelines that spun up the full distributed Core Service, ran A/B interpreter diff tests, and validated cross-team compatibility across three critical teams, preventing regressions before merge

*Application Developer - Full Stack*

*Sep 2023 - Nov 2024*

- Led cross-functional collaboration and managed 12+ error-handling tickets, ensuring on-time delivery by clarifying requirements and facilitating communication
- Improved accessibility compliance and UI inclusivity by implementing WCAG and internal accessibility standards in a complex React.js document template editor, enhancing usability for all users
- Boosted API performance by 65% and resolved long-standing search bugs by refactoring internal Java APIs to support ID-based querying, improving reliability and response times

**Arista Networks, *Software Engineer***, Boulder, CO

**Oct 2021 - Aug 2023**

- Delivered feature-rich JavaScript frontend integrated with Java REST APIs for 1,000+ clients, expanding product capabilities including router blocklisting and dynamic UI enhancements
- Reduced technical debt and improved developer experience by refactoring multiple repositories, converting string-based APIs to structured JSON, documenting flaws, and clarifying time/depth requirements in consultation with the CTO
- Minimized downtime for enterprise clients by implementing automated backup and restore functionality across Javascript, Java, and Python layers, enabling scheduled updates and partial restores

**Wells Fargo, *Data Engineer***, Fremont, CA (Remote)

**Jan 2021 - Jul 2021**

- Processed ~5 million daily records by developing and maintaining ETL pipelines in Informatica and SQL, optimizing mappings, transformations, and sessions to route data from sources to data marts
- Reduced job failure response time from 30–60 minutes to 15 minutes by creating a Bash/AutoSys monitoring script and later reimplementing it in C++ for cross-team adoption, improving system reliability

**Canadian Armed Forces, *Vehicle Technician***, Toronto, ON, Canada

**Jun 2015 - Jul 2016**

- Awarded the honorary rank of Lieutenant Colonel for 1 day in recognition of leadership potential
- Gained hands-on experience as a section commander and completed basic military, land, and driving training that developed perseverance, teamwork, discipline, and attention to detail

## TECHNICAL PROJECTS

**Chess-Lab, a full stack chess web application ([chesslab.com](#))**

**Jul 2024 - Present**

- Built, deployed, and maintained a production-ready chess platform using Vue.js, Flask, Railway, and Vercel, demonstrating ownership of full-stack delivery from domain setup to CI/CD and monitoring
- Engineered complete chess gameplay logic—including piece rules, move legality, timers, and game state transitions—solidifying expertise in complex state management and algorithm design
- Designed the system for long-term extensibility, enabling future additions such as bot opponents, AI analysis, user accounts, game history, and online multiplayer matchmaking

**Veld, *Personal Programming Language***

**Jan 2025 - May 2025**

- Designed and implemented a complete interpreter for Veld in Java, a dynamically typed language with a lexical scanner, recursive descent parser, and Visitor-based AST interpreter

## TECHNICAL SKILLS

Java, JavaScript, TypeScript, Vue.js, Python, Go, Flask, REST APIs, Grafana, Distributed Systems, TeamCity, Jenkins, Debugging, Performance Optimization, Data Structures & Algorithms, System Design, Generative AI (learning)

## EDUCATION

**University of Florida**, Gainesville, FL

**Dec 2020**

Bachelor of Science in Business Administration & Information Systems, Minor in Computer Science