

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 10x 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