ADWAIT KULKARNI

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EDUCATION

University of British Columbia   **Vancouver, BC**
BS in Computer Science and Minor in Data Science   *September 2020 − April 2025*
- Developer in UBC Subbots, GDSC UBC, and UBC DSCI clubs. Past participant of Google's invite-only Software Product Sprint.

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, Go, HTML/CSS, R, C/C++
Frameworks/Libraries: Spring, React.js, Node.js, Express.js, D3.js, pandas, Scikit-Learn, Material-UI, Mongoose, Altair, JUnit, Vitest
Tools/Technologies: Apache Kafka, Redux, Git, GitHub Actions, Docker, SageMaker, Jenkins, AWS, OpenShift, Cloud Foundry
Databases: MongoDB, MySQL, RDS, Redis, H2, Elasticsearch

EXPERIENCE

Full-Stack Developer Intern   **Toronto, ON**
Royal Bank of Canada (RBC)   *April 2023 − August 2023*
- Architected microservices and RESTful APIs with Java Spring to extract deposit accounts from mainframe databases, process, and store them in Kafka topics, and using Redis cache, brought down data recovery time by 25%.
- Devised end-to-end REST services post-HSBC acquisition, and built a Kafka app for monitoring metadata of 20+ prod topics.
- Developed over 10 features for RBC's open-source projects using Java and Web technologies, composed technical documentation resulting in a 50% increase in project adoption, and resolved 20+ bugs.
- Spearheaded dev onboarding by creating development setup and environment access guides, and mentored 2 new developers.
- Chosen as 'Top Talent' from 1400 interns; discussed key projects with executive VPs and Directors in a round-table conference.

Full-Stack Developer Intern   **Toronto, ON**
Royal Bank of Canada (RBC)   *August 2022 − April 2023*
- Reduced development time by 70% for over 200 developers by launching a Java Spring and Thymeleaf-based secret retrieval tool on RBC's Innersource platform.
- Fortified secrets' storage for 20+ apps by utilizing Hashicorp Vault's API, covering 10,000+ profiles and 50,000+ client records.
- Reduced tech debt by 40% in JIRA by updating Maven service dependencies, transitioning secret storage from local YAML environments to online platforms, and releasing hot-fix patches for outdated third-party libraries.
- Authored cloud migration guides for OpenShift and Cloud Foundry and independently migrated 10 apps across cloud providers.

PROJECTS

Distributed Key-Value Store with Raft | *Go, Raft*   **January 2025 − April 2025**
- Developed a fault-tolerant distributed key-value store from scratch using the Raft consensus algorithm from Stanford's ATC 2014 paper in Go, achieving strong consistency and creating persistent and replicated logs.
- Optimized Raft leader election with randomized timeouts to avoid splits and ensure convergence via heartbeat failure detection.
- Engineered replicated logs using Remote Procedure Calls and reduced redundant RPCs with an adaptive retry mechanism.
- Designed state recovery with snapshots and log pruning, enabling restarts without data loss and reducing restart times.

TL;DReviews | *React.js, AWS Lambda, Amazon SageMaker, AWS RDS, AWS S3, Docker*   **August 2024 − December 2024**
- Architected a scalable, end-to-end pipeline that processed and analyzed 6,000 UBC course reviews using AWS services (Comprehend, Lambda, SageMaker, S3, RDS), providing student-focused feedback and enabling real-time insights visualization.
- Built a text summarization ML model with Google's PEGASUS XSUM on AWS SageMaker, enabling automated batch processing of student reviews and generating course-level insights in 0.26 seconds per review, improving scalability for large datasets.
- Secured sensitive data by implementing advanced AWS security protocols, including VPC deployment, IAM role policies, Security Groups, and server-side AWS KMS encryption at rest and in transit, ensuring compliance with CIS/CISA and NIST standards.
- Developed a visualization dashboard with Recharts and D3.js, presenting word clouds, sentiment, and confidence level graphs.
- Cut costs by $20/mo on SageMaker endpoints and idle assets by replacing VM-based EC2 solutions with Lambda auto-scaling.

MovieHub | *React.js, Node.js, Material-UI, Express.js, MongoDB, TMDB API, Docker*   **April 2024 − September 2024**
- Led a team of 4 to engineer a full-stack movie recommendation app, with options to rate, review, share, and stream movies.
- Formulated end-to-end encryption with bcrypt hashing and JWT tokens, increasing security and reducing unauthorized access.
- Modeled evolving watchlists for user preferences using MongoDB Schemas and leveraged caching to reduce latency by 50%.
- Performed CI/CD with GitHub Actions, enhanced automated tests using Vitest and Postman, and deployed with Docker images.