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***

- 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.
- 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***

- Architected microservices 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%.
- 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transitioning secret storage from local YAML environments to online platforms, and releasing hot-fix patches for outdated third-party libraries.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.