Roman Wu

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Education

University of Waterloo	2020 - 2023
Bachelor of Mathematics	Waterloo, ON, Canada

Technical Skills

Languages: Java, Python, Go, GraphQL, SQL, JavaScript/TypeScript, PL/SQL, NoSQL, Shell Script, DAX

Technologies: Spring Boot, Spring Cloud, Apache Kafka, Docker, Redis, Kubernetes, Oracle, Databricks, MySQL, React.js, Node.js, AWS (EC2, S3, RDS, Lambda), Elasticsearch, Kibana, Apache Flink, MongoDB, GitHub Actions, Git, Bash, Google Analytics

Experiences

McKeil Marine — Jun 2024 – Present
Software Engineer | Financial Technology — Toronto, ON, Canada

- Contributed to migrating a monolithic application to a microservices architecture using Spring Boot and Spring Cloud, integrating GraphQL and RESTful APIs to optimize inter-service communication. Achieved a 90% reduction in system synchronization time.
- Developed Go-based containerized apps with Docker and Kubernetes for deployment, scaling, and load balancing. Optimized Kubernetes clusters and CI/CD workflows, cutting infrastructure costs by 20% and boosting reliability during traffic spikes.
- Assisted in the migration of databases to Databricks Lakehouse, creating Flink ETL processes to transform and load large datasets with 100% integrity. Optimized workflows, reducing processing time by 40%, and enabling streamlined operations across teams.

ByteDance (TikTok) — May 2023 – Jun 2024
Software Engineer | E-Commerce Recommendation — Toronto, ON, Canada

- Designed and deployed a real-time recommendation API using Docker and Kubernetes, enabling seamless auto-scaling to handle 5x traffic spikes during peak events, significantly reducing latency by 35% to <50ms, and consistently maintaining 99.99% uptime.
- Enhanced data retrieval with Redis caching, cutting response times by 10% for 10M+ active users. Collaborated with cross-functional teams to optimize cache settings, track metrics, and address critical bottlenecks, ensuring smooth peak traffic performance.
- Contributed to building a robust integration pipeline for third-party vendor connections using RESTful APIs, enhancing concurrency handling and data validation processes. Helped reduce error rates by 30% and improve synchronization speed by 20%.

Apple — Jan 2023 – Apr 2023
Software Engineer Intern | Commerce Engineering — Toronto, ON, Canada

- Contributed to a highly scalable billing system in Java with Kafka for real-time payment processing. Ensured 99.99% accuracy in purchases and subscriptions. Cut billing dispute resolution time by 15% using real-time transaction data streaming architecture.
- Developed internal tools to automate data processing workflows, reducing operational costs by 25% and improving efficiency for 20+ users. Streamlined routine financial reporting and reconciliation tasks, enabling teams to focus on higher-value analyses.

Harvest Fund Management — Sep 2022 – Dec 2022
Software Engineer Intern | Market Data (Quantitative Fund) — Beijing, China

- Optimized Oracle database performance through schema refinement, advanced indexing, and partitioning strategies. Analyzed query plans and conducted load tests, boosting query speeds by 35% and scalability by 25% to handle high transaction loads efficiently.
- Assisted in maintaining enterprise-grade Java EE modules for high-volume financial transactions, enforcing complex business rules and validations. Ensured system reliability and scalability, enabling seamless performance during millions of daily transactions.

ByteDance (TikTok) — Jun 2022 – Aug 2022
Software Engineer Intern | TikTok Search (Frontend) — Toronto, ON, Canada

- Developed reusable React components to enhance design consistency and speed up budgeting platform development. Used modular design and optimized state management, improving data visualization, boosting retention 12%, and cutting dev time 20%.
- Built a real-time analytics pipeline with Kafka for efficient transaction processing. Designed Elasticsearch and Kibana dashboards, boosting observability and real-time monitoring. Increased data processing efficiency by 35% and improved decision-making.

T&T Supermarket — Sep 2021 – Dec 2021
Software Engineer Intern | Web Development — Waterloo, ON, Canada

- Optimized the e-commerce platform's product search using Elasticsearch by fine-tuning indexing, query design, and relevance scoring algorithms, resulting in a 35% reduction in search latency and a 20% increase in search accuracy based on user feedback.
- Implemented Google Analytics to monitor website performance, configuring custom events, goals, and dashboards; delivered actionable insights to stakeholders, driving a 15% increase in user engagement and improved site navigation flow.