

# Roman Wu

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## Education

**University of Waterloo** | Bachelor of Mathematics

## Experiences

**Software Engineer** | *McKeil Marine Ltd*

*Jun 2024 – Present*

- Joined a team of 4 to develop a distributed pricing model in Python, integrating 21 real-time data sources (including fuel prices and weather data) via RESTful APIs. Focused 40% on coding multivariate regression and time-series forecasting and 50% on data integration and testing. Achieved a 5% profitability increase over six months by optimizing vessel pricing with dynamic, data-driven adjustments.
- Spearheaded the development of an automated Tangible Common Equity (TCE) calculation system using Java on AWS (EC2, RDS). Dedicated 50% of my time to designing financial algorithms and 40% to implementing data validation mechanisms, which resolved 95% of financial discrepancies and improved data accuracy by 20%. This system enabled finance teams to perform highly accurate, real-time calculations with increased confidence.
- Utilized AWS Lambda and Step Functions to create serverless workflows, automating asynchronous data processing tasks and reducing operational costs by 25%. Improved efficiency for over 20 daily users by automating routine financial computations and reporting, allowing finance teams to focus on higher-value analyses.
- Assisted in the migration of databases to the Databricks Lakehouse platform, creating ETL processes with PySpark to transform and load large datasets, achieving 100% data integrity. Optimized workflows to reduce processing time, enabling data scientists to deliver insights 40% faster, and enhancing overall data accessibility.

**Software Engineer** | *Hardbacon (Fintech Startup)*

*Mar 2024 – Jun 2024*

- Developed a Java-based RESTful API, handling over 500,000 daily requests. Spent 50% of my time optimizing database queries with MyBatis and implementing Redis caching, reducing response times by 40% and maintaining 99.9% uptime. These improvements significantly enhanced user satisfaction and system performance.
- Contributed to the migration of a monolithic application to a microservices architecture using Spring Boot and Spring Cloud, focusing 40% on service discovery (Eureka) and API gateway (Zuul). Achieved a 30% reduction in deployment time, enhanced scalability, and improved fault tolerance for resilience under high load.
- Developed containerized applications using Docker and deployed them with Kubernetes, automating scaling and load balancing. Allocated 40% of my time to configuring Kubernetes clusters and 30% to streamlining orchestration processes. The result was a 20% reduction in infrastructure costs and improved resilience against traffic spikes.
- Built a real-time data analytics pipeline using RabbitMQ for efficient transaction data processing, dedicating 40% of my time to creating custom Elasticsearch and Kibana dashboards. Enhanced system observability and enabled real-time monitoring, leading to a 35% increase in data processing efficiency and improved decision-making.

**Software Engineer** | *ByteDance (TikTok)*

*Apr 2023 – Mar 2024*

- Enhanced data retrieval by implementing Redis caching, achieving a 40% reduction in response times for 10 million+ daily users. Collaborated with cross-functional teams, dedicating 50% of efforts to tuning cache configurations and monitoring performance metrics, ensuring consistent user experience during peak traffic.
- Optimized MySQL database performance through schema refinement and advanced indexing techniques. Allocated 60% of the time to analyzing query execution plans and conducting load testing, resulting in a 35% improvement in query speeds and a 25% boost in system scalability, effectively supporting high-volume transactions.
- Developed robust messaging systems utilizing RabbitMQ to manage asynchronous processes. Focused 45% on designing fault-tolerant message queues and implementing acknowledgment mechanisms, achieving a 50% increase in message throughput and ensuring reliable communication between distributed services.

**Software Engineer Intern** | *Tencent Cloud*

*Jan 2022 – Aug 2022*

**Software Engineer Intern** | *Alibaba*

*May 2021 – Aug 2021*

**Software Engineer Intern** | *Tencent*

*Sep 2020 – Dec 2020*

## Technical Skills

**Programming Languages:** Java, Python, SQL, PL/SQL, NoSQL, GraphQL, JavaScript/TypeScript, Shell Scripting

**Technologies:** Spring Boot, AWS (EC2, S3, RDS, Lambda, CodePipeline), Redis, Docker, React, Spring Cloud, Kubernetes, Nginx, RabbitMQ, Databricks, MyBatis, Eureka, Git, Jenkins, MySQL, OAuth2, Postman, MongoDB

**Certifications:** AWS Solutions Architect Professional, Databricks Data Engineer, Kubernetes Application Developer