Roman Wu

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Education

Bachelor of Mathematics | University of Waterloo   2020 - 2023

Experiences

Software Engineer | McKeil Marine Ltd (Logistics Technology)   Jun 2024 – Present

- Collaborated with a team of four to develop a distributed pricing model in Python, integrating 21 real-time data sources, including fuel prices and weather data, via RESTful APIs. Implemented multivariate regression and time-series forecasting, achieving a 5% profitability increase over six months through dynamic vessel pricing.
- Designed and implemented an automated financial computation system using Java on AWS (EC2, RDS). Focused on creating robust financial algorithms and advanced data validation mechanisms, resolving 95% of discrepancies and boosting data accuracy by 20%. Empowered finance teams with highly accurate, real-time calculation capabilities.
- Utilized AWS (Lambda, 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 AWS Glue 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 reusable React components with TypeScript to enhance design consistency and streamline development for a personal budgeting platform. Used modular design and optimized state management to improve financial data visualization, increasing user retention by 12% and cutting feature development time by 20%.
- Contributed to migrating a monolithic application to a microservices architecture using Spring Boot and Spring Cloud, integrating Consul service discovery and an Mulesoft API gateway to optimize communication. Achieved a 30% reduction in deployment time, improved scalability, and enhanced fault tolerance 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 Kafka 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 10% reduction in response times for over 10 million daily users. Collaborated with cross-functional teams to optimize cache configurations, monitor performance metrics, and address bottlenecks, ensuring a seamless and consistent user experience during peak traffic periods.
- Optimized MySQL database performance through schema refinement and advanced indexing techniques. Conducted in-depth analysis of query execution plans and performed extensive load testing, achieving a 35% improvement in query speeds and a 25% boost in system scalability, effectively supporting high-volume transactions.
- Developed robust messaging systems using Kafka to manage asynchronous processes, designing fault-tolerant message queues and implementing acknowledgment mechanisms. Achieved a 50% increase in message throughput and ensured reliable communication between distributed services, enhancing overall system efficiency.
- Contributed to building an integration pipeline for third-party vendor connections using RESTful APIs, enhancing concurrency handling. Helped reduce error rates by 30% and improve synchronization speed by 20%.

Software Engineer Intern | ByteDance AI Lab   Jan 2022 – Aug 2022
Software Engineer Intern | Tencent   May 2021 – Aug 2021
Software Engineer Intern | Tencent   Sep 2020 – Dec 2020

Technical Skills

Programming Languages: Java, Python, SQL, JavaScript/TypeScript, NoSQL, Shell Scripting
Technologies: Spring Boot, Spring Cloud, AWS (EC2, S3, RDS, Lambda, Step Functions, CodePipeline, DynamoDB), Docker, Kubernetes, Redis, Kafka, MySQL, React, Nginx, Databricks, GitHub Actions, Elasticsearch, Kibana, JWT
Certifications: AWS Solutions Architect Professional, Databricks Data Engineer, Kubernetes Application Developer