

ANJIE YANG

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WORK EXPERIENCE

Undergraduate Research Assistant

Aug 2022 – Present

University of Ottawa

Ottawa, ON

- Developed full-stack web app with Flask and Vue.js to analyze and visualize epidemiology data, improving researcher efficiency by 40%.
- Constructed Bayesian networks and directed graphical models in Python to identify high-risk TB infection areas based on climate, population, and topographical data.
- Engineered Python OCR pipeline with OpenCV and Tesseract to extract geographic coordinates from 10,000+ complex PDF maps with over 98% precision, saving the team 100+ hours of manual data extraction.
- Developed interactive maps using Folium and Plotly Dash to visualize spatiotemporal TB infection data, facilitating real-time tracking of transmission trends.
- Technologies: **Python, Flask, Vue.js, OpenCV, Tesseract, Folium, Plotly Dash**

Software Development Intern

May 2022 – Aug 2022

Xu Investment Management Ltd.

Beijing, China

- Optimized execution times of core SQL queries in C++ by 40% through implementing multidimensional indexing, query rewriting, and advanced profiling using EXPLAIN analyze.
- Developed a distributed data migration tool in C++ and Python that orchestrated parallel ingestion across 20+ PostgreSQL instances, ensuring accuracy and transactional integrity, which saved 30% on operational costs.
- Built a real-time portfolio risk analysis pipeline with Kafka, Spark Streaming, and MongoDB to enable low-latency analytics, reducing lag by 60% compared to Hadoop batch.
- Tuned database performance on PostgreSQL and Oracle through index optimization, statistics collection, table partitioning, and database configuration tuning.
- Technologies: **C++, Python, PostgreSQL, Oracle, MongoDB, Kafka, Spark**

Software Engineer Intern

May 2021 – Aug 2021

ZhongAnYi Technology

Xi'an, China

- Optimized Java REST API performance by 20% through implementing caching, concurrent request handling, and query tuning of JPA calls.
- Designed a distributed caching architecture using Redis and Spring to reduce database reads by 25%, handling over 100K requests per second, which contributed to a 15% reduction in system latency.
- Migrated monolithic application to AWS cloud using EC2, RDS, S3, CloudFront, and Auto Scaling for high availability to serve 50K+ users. Employed AWS CDK for reliable infrastructure-as-code management during migration.
- Contributed to CI/CD pipelines, unit testing code coverage, and code reviews for team of 8 engineers using agile methodology.
- Gained hands-on experience with profiling, load testing, and monitoring tools including New Relic, JMeter, and CloudWatch.
- Technologies: **Java, Spring Boot, REST, JPA, Redis, AWS, CloudFront, New Relic, JMeter**

PROJECT EXPERIENCE

Bisection Performance Analysis Tool 🔗

- Articulated in the openEuler Community, which boasts over 200 forks and wide-ranging adoption in various industries, in Open Source Promotion Plan (OSPP) 2023, developed a Python-based Bisection Performance Analysis Tool, which has so improved commit tracking efficiency by 80% and reduced manual performance tuning efforts by 95%.
- Designed an efficient CLI, reducing setup time by 40% and integrating real-time tracking and logging, enhancing productivity and debugging speed.
- Technologies: **Python, Linux, Git, Jenkins**

Real-Time Cryptocurrency Analysis System

- Collaborated with three cross-team partners, including engineers and designers, to develop a Java system using Spring Boot, Kafka, and agile methodology to ingest real-time Bitcoin and Ethereum price data from the Binance API.
- Implemented caching and storage for fast data analysis and a reactive front-end with React for real-time data visualization and improved UI responsiveness.
- Technologies: **Java, Spring Boot, Spring Batch, Kafka, Redis, Elasticsearch, React**

EDUCATION

University of Ottawa

Expected Dec 2024

Bachelor of Engineering in Computer Science

Ottawa, ON

SKILLS

Java | Python | C++ | C# | TypeScript | Go | Swift | PostgreSQL | NoSQL | Redis | Spring Boot | Angular | Vue | React | AWS