ZHONGHAO (RICHARD) YANG

📱 +1(778)828-7162　✉ richardyangzh@gmail.com　🌐 richardyangzh.com　💼 richard-zh-yang　🐙 richard-zh-yang

EDUCATION

University of British Columbia　　　　　　　　　　　　　　　　　**Sep 2020 – May 2024**
Bachelor of Science in Computer Science (Co-op), minor in Data Science　　　　　*Vancouver, BC*
- Received Trek Excellence Scholarship (top 5%), and Faculty of Science International Student Scholarship.
- Coursework: Software Engineering (97%), Computer Systems (92%), Data Structures and Algorithms (94%)
- GPA: 3.9/4.0 (88%)

EXPERIENCE

Amazon　　　　　　　　　　　　　　　　　　　　　　　　**May 2023 – Sep 2023**
Software Development Engineer Intern　　　　　　　　　　　　　　　　*Vancouver, BC*
- Designed and implemented a highly scalable weighted priority queuing mechanism with FIFO for internal notification system using **Java**, achieving a **95%** reduction in wait time for high-severity items on average in production.
- Architected new AWS CDK stacks infrastructure for the project's CloudFormation setup using **TypeScript**.
- Crafted a DAO from scratch for **DynamoDB**, incorporating enhanced settings to ensure optimal project execution.
- Implemented unit tests for **Lambda** functions achieving **99%** coverage, complemented by integration and load tests.
- Created **CloudWatch** dashboards to monitor summary statistics, additionally setting up alarms for issue detection.
- Expanded the project scope significantly and completed deliverables ahead of the stipulated timeline by **2 weeks**.

Huawei　　　　　　　　　　　　　　　　　　　　　　　　**Jan 2023 – May 2023**
Software Engineer R&D Intern　　　　　　　　　　　　　　　　　　*Markham, ON*
- Researched and developed a storage engine using **C++** for a serverless and fully scalable distributed database system.
- Parallelized read operations, achieving linear performance increase with respect to the number of worker threads.
- Implemented an **Arrow** connector to integrate **Hive Metastore**, enhancing metadata management and interoperability
- Developed tailored **Python** scripts and conducted in-depth hash join performance benchmarking for **Velox**, **ClickHouse** and **GaussDB**, enabling precise system evaluation and pinpoint opportunities for optimization.
- Improved the hash build and probe time by **5%** for numbers through the adoption of more efficient hash functions.
- Operated within a **Linux** based environment and crafted **Shell** scripts for effective project compilation.

IBM　　　　　　　　　　　　　　　　　　　　　　　　　　**May 2022 – Aug 2022**
Backend Developer Intern　　　　　　　　　　　　　　　　　　　　*Markham, ON*
- Contributed to backend microservices using **Java** and **Maven** focusing on **AI/ML** features in IBM Cognos Analytics.
- Integrated Conversation AI Assistant into Microsoft Teams by building a chatbot using **TypeScript** and **Node**.
- Trained **NLP** models and integrated newer versions of Core NLP package that eliminated all the critical vulnerabilities.
- Automated manual test cases using **JavaScript** and **Selenium**, reducing average test time by **3 minutes** per case.
- Utilized **Jenkins** for **CI/CD** infrastructure to automate the process of loading the latest build and deploy.

CAE　　　　　　　　　　　　　　　　　　　　　　　　　　**Jan 2022 – Apr 2022**
Full Stack Developer Intern　　　　　　　　　　　　　　　　　　　*Richmond, BC*
- Developed and maintained a cloud-based SaaS solution for aviation training management system using **C#**, **ASP.NET** and **JavaScript** for web application, and **Xamarin.iOS** for mobile application.
- Rewrote the existing **JavaScript** and **jQuery** web app frontend with **React** and **Bootstrap** as a prototype.
- Contributed extensively to developing many new features, including utilizing **Azure Functions** and **Azure Service Bus** to send user email notifications with data queried using **Entity Framework Core**, and added unit test coverage.
- Refactored and improved the performance by **80%** for updating all user's data on mobile app with multi-threading.

UBC　　　　　　　　　　　　　　　　　　　　　　　　　　**Jan 2021 – present**
Undergraduate Teaching Assistant　　　　　　　　　　　　　　　　　*Vancouver, BC*
- Instructed upper-year courses in Cloud Computing, Software Engineering, and lower-year courses in Data Science, and Statistics, receiving perfect evaluation scores in teaching ability, preparedness, and communication.

PROJECTS

Insight UBC | *TypeScript, JavaScript, Express, Node, HTML, CSS, Mocha, Chai*　　　　**Dec 2021**
- Built a query engine from scratch for the backend using **TypeScript**, **Express**, **Node** that is able to extract dataset information from zip files and respond to queries supporting projection, filtering, ordering and aggregation.
- Developed **RESTful APIs** supporting CRUD operation and integrated Google Map to the front end.
- Implemented **Test Driven Development** using Mocha and Chai, and used dynamic folder testing.

TECHNICAL SKILLS

Programming Languages: Java, C#, C++, C, Python, TypeScript, JavaScript, Julia, PHP, SQL, HTML, CSS, Bash, R
Frameworks: React, jQuery, Express, Node, Django, .NET, Xamarin, MongoDB, MySQL, Selenium, JUnit, Mocha/Chai
Tools: Git, Docker, Jenkins, Azure, AWS, Postman, IntelliJ IDEA, VS Code, Visual Studio