Haoran Huang

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Qualifications/ Skills

- Programming: C++, Golang, C, Java, Python, R, Vue.js
- Data Storage: Relational database (MySQL, PostgreSQL, SQLite), Redis
- DevOps: Terraform, Kubernetes, ArgoCD, Git
- Monitoring: Datadog, Sentry

Education

Australian National University, Canberra Aug 2020 – Jul 2022
Master of Computing GPA: 6.46/ 7
- Thesis: Theoretical Connection between Stochastic and Barrier Method for Linear Programs (with Professor Stephen Gould)

University of Waterloo, Waterloo, Canada Sep 2017 – Jul 2019
Bachelor of Environmental Studies, Honours Geomatics, Honours Mathematics Major GPA: 86.75
- Awards: Dean's Honours List (2017 Fall, 2018 Winter, 2018 Spring and 2018 Fall and Graduation)

China University of Geoscience, Wuhan, China Sep 2015 – Jun 2017
Bachelor of Science in Geographic Information Science GPA: 3.51/ 4

Experience

Full Stack Engineer, Bukalapak, Melbourne Dec 2022 – Present
- Re-designed auto-switch that switches between sellers based on the successful rate. Added timestamps to Redis keys to store transaction metrics and get metrics within any time interval in O(1) time, reduced the Redis usage from 90% to 5%.
- Helped business team with balance checking on different partners by generalizing authentication and balance checking flows and created a cron job that checks balance regularly and sends Datadog alerts once balance is below threshold.
- Took initiatives to improve the clarity and reusability of code by creating libraries for bank account information checking, time mockery and encryption methods.
- Helped to migrate services from Azure to GCP by using Terraform to provision resources, Kubernetes for deployment, DMS for database migration and Locust for load testing.
- Developed an efficient endpoint to check for available products for customers using concurrency in Golang.

Software Engineer Internship, Wuda Geoinformatics, Wuhan, China Dec 2019 – May 2020
- Developed an API that retrieves and effectively displays a large amount of data from database using Qt MVC model.
- Reviewed and implemented an algorithm to generate the centerline for two given lines.
- Built a map frame conversion tool that displays the map frame generated by input parameters using Qt with C++.

Projects

Text Genre Classification Nov 2021
- Built a text classification model that classifies English texts into different genres by fine-tuning BERT model using PyTorch.

2D Packing problem Oct 2021
- Found (sub)optimal solution to packing problems that fits as many packages as possible into certain containers by first constructing a greedy solution and then performing Large Neighborhood Search to improve the solution.

Compiler design Jan 2019 – Apr 2019
- Programmed a compiler, which translates wlp4 (a subset of C with only integer and pointer types) to MIPS, using C++. The compiler has the functions of token recognition, context-free grammar parsing, MIPS code generation and optimization (e.g., dead code elimination, strength reduction and register allocation).

Object-oriented game design (check on https://github.com/parventures/CC3K.git) Jun 2018 – Aug 2018
- Designed a rogue-like game called "CC3K" using polymorphism and design patterns (e.g., observer pattern and visitor pattern) to model the interactions between different objects and implemented it with C++ in a group of 3.

Activities

Vice president, Volunteer Association, China University of Geoscience, Wuhan, China Apr 2016 – Jun 2017
- Organized flight ticket sales on campus to ensure that students can go home in the annual spring festival rush.
- Managed "Volunteer Bank" and helped volunteers open a "volunteer account" and record their "volunteer hours" which could be used to barter for gifts or school supplies.

Volunteer, Student Coffee Shop, University of Waterloo, Waterloo, Canada Jan 2018 – May 2018
- Helped local farmers and students by selling locally grown and made food and coffee to students without making profits.