Honglin Cao

http://v2ark.com
h45cao@uwaterloo.ca | 647-939-8018

EDUCATION

UNIVERSITY OF WATERLOO
BACHELOR OF COMPUTER SCIENCE
Expected Sep 2025 | Waterloo, ON
President's Scholarship of Distinction
Faculty Average: 93.94

LINKS

Github:// **V2arK**
LinkedIn:// **Honglin Cao**

COURSEWORK

UNDERGRADUATE
Algorithms
Audio Processing
Computer Network
Operating Systems
Distributed Systems
Artificial Intelligence
Object-Oriented Programming
Application Development (Full Stack)
Data Structures and Data Management

SKILLS

LANGUAGES
Proficient:
Python • C • C++ • C# • Java
SQL • Racket • R • Bash • LaTeX
Groovy • HTML • CSS
Familiar:
JavaScript • PHP • kotlin

TOOLS
Postman • GaussDB • CockroachDB
Jenkins • GitLab • VS Code
Fusion 360 • Microsoft Access
Unity 3D • Unreal 4 • GNU Octave
MobaXterm • IntelliJ IDEA

PLATFORMS
Arduino • Raspberry Pi
Flipper Zero

OS
Linux • Windows • MacOS

EXPERIENCE

HUAWEI | DISTRIBUTIVE DATABASE ENGINEERING INTERN
Sep 2023 – Dec 2023, Jan 2022 – Sep 2022 | Markham, ON

- Quantified database system performance regression with tools like **perf**, **gstack**, **vm/iostat**, **CPU Flame-graphs** and **jTPCC**, aided developers on improving design with insights for them. Worked on automating them to a one-click program with GUI using **Bash**, **Pyhon** and **HTML/CSS/PHP**.
- Single-handedly **standardized** automated tests for **TPC-C** benchmark for the team on single-node, physical and logical multi-node **GaussDB** configurations with template scripts in **Groovy**, **Bash**, **Python** and **Java** and setup / usage Wikis, ensured uniform experiences, easy adaption and skill transfer.
- Managed, fixed and upgraded servers to suit developers' needs, troubleshooted issues ranging from faulty link negotiation settings to low performance caused by unoptimized sysctl attribute.
- Allocated and setup working environments for new and existing developers, and negotiated with Huawei headquarter for new machines to ensuring a fair distributed workload on servers across the teams.
- Created automated **compilation tests**, **unit tests** and **performance tests** on **GitLab CI** and **Jenkins** across **ARM** and **X86** environments, maintained and adapted them to suit the rapid development goals.
- Documented findings from experiments into reports for developers to present; Guided team members with well-written Wiki on different tasks.

HUAWEI | DISTRIBUTIVE DATABASE ENGINEERING INTERN
Jan 2023 – Apr 2023 | Markham, ON

- Designed and implemented a **RPC** sub protocol over **TCP** and **RDMA**, allowing packages to be send without size limits in **C**, allowing **crash recovery** message to be sent on multi-node **GaussDB** configuration.
- Designed and implemented **unit tests** from the ground up for testing **RPC** functionality, and used existing framework to implemented **unit tests** for other features using **C++** and **JUnit**.

PROJECTS

WATDFS | C++ BACKEND
Dec 2022 | Project Manager, Programmer

- Designed and implemented a **Distributed File System** for **UNIX** based operating systems with **libfuse**, achieved the client-server remote communication using generic **RPC** protocol, supported creating, opening, reading, writing, and closing files on remote machines.

BAIERS' TODO LIST | KOTLIN FULL STACK
Dec 2022 | Project Manager, Programmer

- Implemented the **GUI** with **MVVM** using **JavaFX**, with **unit tests** in **JUnit**, used **Spring Framework** with **CockroachDB** to host the **server**, did manual tests on **API** with **Postman**.

SETTLERS OF CATAN | C++ OOP
Sep 2021 | Project Manager, Programmer

- Single-handedly designed the structure of the program with **OOP** concepts and **design patterns**, programmed the framework and **unit tests** with **C++** and finished the program with detail documentation in 7144 lines.