

Arist Xu

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EDUCATION

University of Waterloo Sep. 2020 – Apr. 2025
Bachelor of Computer Science, Honours 3.9 Cumulative GPA

- President of UWCSA, Project Developer for UW Blueprint, President's Scholarship of Distinction.
- Courses: Algorithms, Data Structures, Real-time Programming, Operating Systems, Databases, Networks.

WORK EXPERIENCE

Optiver Jul. 2024 – Aug. 2024
Incoming Software Engineer Intern Amsterdam, NL

- Will learn about various trading systems and build latency-critical applications for financial markets.

Super.com Sep. 2023 – Present
Full-Stack Software Engineer Intern San Francisco, CA

- Implemented a **Redis caching solution** that allows micro-services to communicate the most up-to-date booking data to each other, reducing error rates by **50%** as measured in DataDog.
- Improved booking fraud detection by **300%**, as measured by a reduction in charge-back rates, through precise transmission of user and booking data for over **500,000** monthly orders to Riskified.
- Refactored the booking flow for five major hotel suppliers that collectively handle over **400 million** daily requests, reducing redundant API calls by **60%** through strategic caching of hotel mappings.
- Implemented customer-facing AB tests using Amplitude to analyze user behavior, increasing revenue by **2%**.

ODAIA Intelligence Inc. Jan. 2023 – Apr. 2023
Software Engineer Intern Toronto, ON

- Built and deployed data pipeline validation infrastructure using AWS ECS that automatically verifies over **100,000 data points** per project, increasing testing speed by **400%**.
- Developed an interactive Slack App with AWS Lambdas that communicates real-time data pipeline updates, increasing team velocity by saving up to **4 hours** of debugging per project.
- Optimized pandas data frames by down-casting NumPy data types and optimizing the order of SQL queries, reducing memory usage by up to **90%** and increasing processing speed by up to **300%**.

Sony Interactive Entertainment Jan. 2022 – Apr. 2022
Software Developer Intern Waterloo, ON

- Enhanced the PlayStation 4's search telemetry by sending user data payloads to backend analytics systems.
- Implemented dynamic rendering logic in response to events and product properties, debugging multiple visual defects and ensuring that expected details are shown to **millions of users** globally.
- Maintained the functionality and stability of features by developing an extensive **test suite** for visual changes.

PROJECTS

Real-Time Operating System

- Developed a real-time microkernel for the Raspberry Pi 4 using **C++** and **AArch64** assembly, supporting various features such as context switching, memory management, system calls, and task scheduling.

Redis Clone github.com/Arist937/redis-clone-cpp

- Engineered a Redis clone from scratch in **C++** using **network sockets** and supporting GET/SET operations.
- Implemented a dynamic **event loop** using the poll system call, enabling the management of concurrent clients.

Chrome-GPT arist.dev/projects/chrome_gpt

- Developed a browser extension using **Flask** and **React.js** that allows users to query web pages with OpenAI's GPT models by injecting relevant context into their prompt based on vector cosine similarity of text embeddings.

TECHNICAL SKILLS

Languages: Python, JavaScript (TypeScript), C++, C, Go, Java, SQL, Racket.

Tools & Technologies: AWS, React.js (Next.js), Flask, Express, Node.js, NumPy, pandas, pytest, Git, Docker, Firebase, Firestore, Redux, Redis, Material UI, Jenkins, MySQL, PostgreSQL, Snowflake.