

# Chenhao (Calvin) Diao

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## Skills

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**Languages:** C/C++, C#, Python, Go, MATLAB, Java, Web (HTML/CSS/JS), XAML, Flutter

**Frameworks & Tools:** .NET, Unity, Git, Jenkins (CI/CD), GoogleTest, Wireshark, Linux, MySQL, AWS/GCP, Agile

## Education

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**McMaster University**

Jan 2024 – Dec 2025 (Expected)

*M.Eng in Computing and Software | GPA 4.0/4.0*

*Hamilton, Canada*

**Nanjing University of Information Science & Technologies**

Sep 2018 – June 2022

*Honors B.Eng in Electronic Information | GPA 3.9/4.0 | Rank: 1/135*

*Nanjing, China*

- National Scholarship (China) (**Top 0.1%**) and President's Scholarship (**Top 0.2%**).
- Won **five National** and **eleven Provincial** awards in China nationwide engineering competitions. ([link](#))

## Experience

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**Chromium | GSoC'25 Open Source Contributor ([Changelist link](#))**

May 2025 – Aug 2025

*Software Developer | C++ & GCP & GoogleTest & Gerrit & Network API & Large-scale System Development*

- Implemented **Public Resolver Errors (PRE) APIs** in Chromium's **DNS stack**, extending **Extended DNS Errors (EDE, RFC 8914)** to deliver resolver-provided explanations of blocked domains, affecting all DNS queries.
- Parsed **PRE metadata** with robust validation in compliance with **I-JSON (RFC 7493)**, and expanded resolver incident IDs (inc) into **dereferenceable URLs** based on IETF **draft-nottingham-public-resolver-errors-01**.
- Enhanced **DNS error handling** through **20+** comprehensive unittests covering emoji and malformed encodings.
- Verified **end-to-end behavior** by requesting **EDEs** on all DNS queries and testing with **AdGuard DNS** provider, confirming compatibility of the **PRE implementation** and aligning Chromium with emerging IETF standards.

**General Motors**

Sep 2024 – Aug 2025

*Software Engineer (Co-op) | Python & CI/CD & Git & Jenkins & Ethernet & TCP/IP & E2E Testing & Agile Development*

- Developed **Python test automation scripts** for the vehicle diagnostic system, achieving **100%** product coverage.
- Validated legislated controller behavior in both **Hardware-in-the-Loop (HIL)** and **virtual ECU (vHIL)** environments through automated nightly test execution on the **Jenkins CI/CD platform**.
- Troubleshoot and analyzed **DoIP/DoSoAD** diagnostic network traces on **Automotive Ethernet** using **Wireshark**, identified **bit-level** issues, burning down backlog and increasing test pass rates from **75%** to **95%**.
- Collaborated in an **Agile environment** using **Jira** to track and resolve tickets, driving continuous improvements in test validation and troubleshoot workflows across **cross-functional teams**.

**Samsung Electronics R&D Center**

Sep 2022 – Dec 2023

*Software Development Engineer | C# & .NET & JavaScript/TypeScript & Node.js & Linux & FLUX & Redis*

- Engineered advertisement banners for Samsung TV using **FLUX (UI framework)** and **XAML**, reducing resource consumption and improving response time by **40%**, impacting over **2 million** users globally in 2024.
- Optimized ADagent data fetching by transitioning from remote server to **Redis contentDB**, accelerating loading speed by **25%** on 2018/2019 TV models and boosting advertisement exposure from **40%** to **65%**.
- Utilized **Streamline** for ADagent performance analysis and implemented **asynchronous programming** to optimize **thread scheduling**, significantly reducing the launch time from **150ms** to under **100ms**.
- Led full-stack development of dynamic **ADplayer PoC** using **C#**, recognized as the **Lab's best PoC**.

## Projects

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**VR Calling on Quest 2 and Rokid AR Glasses via panoramic camera**

May 2024 – Present

*Master Project | Go & C# & MySQL & Android & Linux & Docker*

- Established a **panoramic calling system** integrating Quest 2 and Rokid AR glasses with Insta360 cameras, achieving **3500 ms** ultra-low latency and real-time user management via **Unity (C#)** and **GO/MySQL** backend.