

# NATHAN TANG

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## EXPERIENCE

### Dotdash Meredith *Software Engineer*

May 2022 – Present

- Co-architected and built a **full-stack** ad configuration and delivery platform (API, database, configuration management panel) that supports instant configuration changes across a global ad network.
- Led development of **backend** optimizations for dynamic code bundling, recursive rule sorting, and configuration tiering based on user data, reducing average payload size by **30%** and improving API response performance.
- Engineered a rule compression algorithm that reduced the number of configuration entries by **40%**, improving API response times globally and reducing server load.
- Developed a **web-based configuration panel** with live rule search/editing, **OAuth**-secured access, and instant publishing capabilities used daily by ad operations and configuration teams.
- Built tools for automated API schema to DTO generation and rewrote the Google Publisher Tags (GPT) tagging integration test suite, enhancing system stability and development speed.

### Aquatic Biosphere Society of Canada *Software Engineer*

January 2024 – April 2024

- Created an educational **mobile augmented reality game** in partnership with the University of Alberta, showcased live at the Edmonton Boat and Sportsmen's Show.
- Developed a **computer vision pipeline** using OpenCV for mural image recognition on mobile, optimized for fast processing under real-world bandwidth and device constraints.
- Built a custom web **admin CMS** interface for content teams to manage game types, murals, facts, scores, and user data with real-time updates and live content editing.
- Designed core **APIs** for gameplay mechanics, scoring, user tracking, and CMS functionality, integrating both the game and admin tools with Google OAuth authentication.
- Engineered a resilient cloud infrastructure on **Microsoft Azure**, resulting in near 100% uptime.

### Snap & Tow *Backend Software Engineer*

March 2022 (Contract)

- Designed and implemented the backend system and database schema for a **real-time** roadside assistance platform.
- Built secure authentication flows using **JWT** and **SendGrid** for sign-up, login, and password recovery.
- Integrated with **Google Maps** API to match users with the closest operators in real time based on live location.

## PROJECTS

(More available to view on my website)

### Discord Bot | TypeScript, Node.js, Docker, MySQL

- Developed a **verified Discord bot** that queries game servers in real time using the UDP Query protocol to return live status and player information. Designed for resiliency using **Docker** for isolation and persistent state.
- Deployed to **700+ Discord communities** and serves **hundreds of active users** daily.

### Rideshare App | TypeScript, React, Express, PostgreSQL, Redis

- Developed a rideshare application centred around regularly scheduled events. Implemented a **REST API** backend with authentication using the **OAuth 2.0** protocol (Bcrypt and JWT).
- A fully-featured database implements users, drivers, administrators, and scheduled trips and events.

## EDUCATION

### University of Alberta

September 2019 – April 2024

- Bachelor of Science in Computing Science, Specialization in Software

## TECHNICAL SKILLS

Languages	TypeScript, JavaScript, Python, Go, Java, C, HTML/CSS
Databases	MySQL, PostgreSQL, MongoDB, Redis, Cloud Firestore
Technologies	Node.js, React/Vue/Svelte, Express.js, Django, Git, Docker, AWS, Azure