

ETHAN CHEN

+1 (403) 319-0288 ✉ e263chen@uwaterloo.ca [in linkedin.com/in/chene0](https://www.linkedin.com/in/chene0) github.com/chene0

TECHNICAL SKILLS

Languages: TypeScript, Python, C#, C, C++, Java, SQL, HTML, CSS
Frameworks/Libraries: React, Redux, Next.js, AngularJS, Express.js, ASP.NET Core, Blazor
DevOps: AWS (S3/Lambda), Vercel, MongoDB
Developer Tools: STM32CubeIDE, Git, Docker, Jira, Confluence, Linux, Jest, Unity3D

EXPERIENCE

Full Stack Developer

May 2025 – Present

BTNX Inc.

Pickering, Ontario

- Engineered scalability of an ASP.NET Core customer facing site by encapsulating data of reusable components using **10+** models, increasing maintainability and supporting rapid feature expansion
- Improved export-to-Excel for an internal manager site by integrating employee claims and **500+** expenses via SQL Server and ReactJS, creating unified reports and streamlining user workflows
- Reduced accidental data loss by **95%** in an AngularJS/ASP.NET Core manager site by implementing confirmation modals and Promise-based API validation for **100%** of destructive form actions, ensuring user intent alignment and seamless error handling

Firmware Developer

Sept 2022 – Mar 2024

First Tech Challenge Robotics Team, Strathcona-Tweedsmuir School

Okotoks, Alberta

- Boosted divisional ranking by **15+ positions** in 1 year through **Java** autonomous routines, leading to provincial qualifiers
- Improved alliance match scores by **20%** via real-time strategic coordination during <10 minute intermissions
- Accelerated debugging workflow through modular Java architecture reused across 2 competition seasons
- Reduced weekly team standups from 30 minutes to 20 using the template method design pattern to abstract algorithms

PROJECTS

Gamified Speaking Trainer GeeseHacks 2025 Project | JavaScript, Next.js, React, TailwindCSS, PostgreSQL, Flask



- Developed a **Next.js** and **Flask** full-stack web app that leverages ElevenLabs and Gemini to assess speaking skills in real-time
- Programmed a **Node.js** middleware to extract user requests into data sent to Flask endpoints and receive the speech evaluation
- Designed a **PostgreSQL** schema to streamline user management, enabling seamless scaling to accommodate **2x user growth**
- Enhanced the frontend to read/write to the database using **Prisma ORM**, storing user profiles and AI-generated evaluations

Problem Set Assistant | TypeScript, Next.js, React, Redux, TailwindCSS, PostgreSQL, Vercel, AWS S3, AWS Lambda



- Developed a **Next.js** and **React** full-stack web application that identifies the user's areas of improvement in problem sets
- Automated 40%** of manual user data entry by using **AWS Lambda** and OCR (TesseractJS) to detect questions in a problem set
- Increased data organization efficiency by **20%** through **S3** bucket optimization indexed by **JSON** trees in **PostgreSQL**
- Leveraged **Redux** to share states between the file explorer and the PDF canvas whilst keeping the two components as siblings

STM32F401RE Power Monitoring Device | STM32CubeIDE, C, Jira, Confluence

- Developed the firmware for an STM32F401RE in **C** that uses a current transformer to determine a device's power consumption
- Defined and tested the test setup, environmental parameters, measurement standards and pass criteria for **5 specifications**
- Configured the signal of an analog to digital converter to be processed and sent to a display via **UART** in **<1 ms**

Real-time Math Notation Renderer Hack the North 2022 Project | C#, .NET Windows Forms



- Developed a **.NET** Windows Forms application during a **36 hour** hackathon to render real-time mathematical notation
- Collaborated on feature development and resolved merge conflicts using **Git** version control with hackathon teammates

First Person Video Game | C#, Unity3D



- Reduced object collision bugs by **40%** via **OOP** architecture separating player controls from physics logic
- Implemented user-friendly multiplayer capabilities through the integration of the **Photon Networking Engine**
- Iterated on game mechanics and UI based on documented playtesting feedback, resulting in improved player engagement

EDUCATION

University of Waterloo

Candidate for BAsC in Computer Engineering GPA: 4.00/4.00

Waterloo, Ontario

- 2x Term Distinction, Timothy Stiles Memorial Mathematics Award (**\$2,500**), President's Scholarship of Distinction (**\$2,000**)
- Canadian Senior Mathematics Contest 2023 Certificate of Distinction