Ethan Chen

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EDUCATION

University of Waterloo **Sep. 2024 – Expected Apr. 2029**
Candidate of BASc in Computer Engineering   GPA: 4.00/4.00 *Waterloo, Ontario*

TECHNICAL SKILLS

Languages: TypeScript, Python, Java, C#, C++, SQL (Postgres), HTML/CSS
Frameworks/Libraries: React, Redux, NextJS, ExpressJS, TailwindCSS, .NET, Tauri
Developer Tools: GitHub, Jira, Confluence, Docker, Linux, Jest, VS Code, VS Community, Eclipse, Android Studio, Unity3D, NodeJS
Cloud/DevOps: Vercel, AWS S3, AWS Lambda, Neon Serverless DB, MongoDB

EXPERIENCE

First Tech Challenge Robotics Team, Strathcona-Tweedsmuir School **September 2022 – March 2024**
Lead Programmer *Okotoks, Alberta*
- Contributed to increasing the team's **divisional ranking by 15+ positions** and entering provincial qualifications **within a year** by developing effective Java code for the robot using Android Studio to compete in the autonomous phase.
- Coordinated under a learning mindset with teammates during **5 to 10 minute match intermissions** to troubleshoot the robot.
- Facilitated strategic communication with alliance teams to leverage the alliance's strengths, **improving match scores by 20%**.

Setford Consulting & Technology Ltd. **August 2023 – October 2023**
Volunteer Front-End Web Developer *Calgary, Alberta*
- Developed "structure3d.com" with JavaScript to build interactive elements in the DOM, **improving conversion rates by 20%**.
- **Boosted user retention rates by 25%** by designing and implementing a responsive, user-friendly interface using TailwindCSS.
- Bolstered communication skills through **weekly meetings** with the client, maintaining alignment with project requirements.

PROJECTS

Gamified Speaking Trainer GeeseHacks 2025 Project | *JavaScript, NextJS, React, TailwindCSS, PostgreSQL* **January 2025**
- Collaborated with an **agile** team to develop an app in **24 hours** that leverages ElevenLabs and Gemini to assess speaking skills.
- Developed 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 the users' profiles and AI-generated evaluations.

Problem Set Assistant | *TypeScript, NextJS, React, Redux, TailwindCSS, PostgreSQL, Vercel, AWS S3, AWS Lambda* **July 2024**
- Developed a NextJS and React full-stack web application hosted on Vercel that helps the user focus on areas for improvement.
- **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%** by leveraging S3 to store user files organized by JSON trees in PostgreSQL.

To-do list Desktop Application | *TypeScript, NextJS, React, Tauri, TailwindCSS* **March 2024**
- Engineered a NextJS and Tauri-based desktop app that leverages the OS-provided web engine to achieve **2-3 MB bundle sizes**.
- Implemented Todoist REST API and OAuth to reference a user's to-do list through a **3 stage authorization procedure**.

Real-time Mathematical Rendering Hack the North 2022 Project | *C#, .NET Windows Forms, VS Community* **September 2022**
- Developed a desktop application using .NET Windows Forms to render mathematical notation in real-time.
- Actively learned collaboration capabilities on GitHub with hackathon teammates to complete the project in **36 hours**.
- Improved presentation skills through preparing a concise **5-minute presentation** to sell the idea of the project to 3 judges.

First Person Video Game | *C#, Unity3D, VS Community* **September 2021**
- Utilized **object-oriented programming** to develop classes assigned to "GameObjects" to maintain an organized system.
- Implemented user-friendly multiplayer capabilities through the integration of the Photon Networking Engine.
- Ensured positive game quality by conducting playtesting with volunteers, **documenting** and addressing their concerns.

AWARDS

University of Waterloo President's Scholarship of Distinction **July 2024**
Awarded for a top 6 course average of 95%+ in Grade 12. *University of Waterloo*

Canadian Senior Mathematics Contest Certificate of Distinction **December 2023**
Ranked in the top 25% of all contestants who took the 2023 Canadian Senior Mathematics Contest. *University of Waterloo*