

Matthew Petersen

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Education

University of Waterloo

Sep 2025 – April 2030

Systems Design Engineering, Bachelor of Applied Science (BASc)

Waterloo, Ontario

- Schulich Leader Scholarship (\$120,000) & President's Scholarship of Distinction (\$5,000)

Technical Skills

Languages: Python, Java, C++, C#, HTML/CSS, JavaScript, TypeScript, Kotlin, SQL, MATLAB, Swift

Developer Tools: Git, VS Code, MATLAB, NetBeans, EasyEDA, Cursor, Blender, Unity

Technologies/Frameworks: React, Next.js, Node.js, Pytorch, Flask, MongoDB, Pandas, REST APIs, Tailwind, Vite

Work Experience

Waterloo Reality Labs

Sep 2025 – Present

Software / ML Engineer

Waterloo, Ontario

- Developed **PyTorch**-trained neural networks and integrated them into **C#** scripts within **Unity** for Meta Quest headsets, enabling developers to record and achieve real-time recognition of custom complex hand gestures

U+ Education

Sep 2023 – Jan 2024

Front-End Web Developer

Markham, Ontario

- Designed blog pages in **Figma** and built with **React** and **TypeScript**, deploying on **AWS** to reach **100+** readers
- Enhanced all language pages with responsive layouts and **SQL** integration, increasing engagement by **25%**

Leadership Experience

Project WhyFi

Sep 2023 – Present

Founder / President

Markham, Ontario

- Founded a **student-led non-profit organization** dedicated to making financial education accessible for youth
- Published an online course with **750+** students, hosted virtual workshops, launched a podcast, presented at elementary schools, and raised **\$2000+** for local community organizations
- Reached **2200+** students in York Region and **18000+** students worldwide through online initiatives

DECA Ontario

Sep 2024 – June 2025

Chapter President

Markham, Ontario

- Led an executive team of 10 and a club of **130+** members, directing all majors initiatives and events
- Implemented new training methods and lesson plans, resulting in a **20%** increase in provincial qualifiers

Projects

3D AI Talking Clone | Next.js, Three.js, Node.js, Tailwind CSS, WebGL

August 2025

- Developed a 3D AI chatbot with **voice-cloned** lip-sync using **Three.js** for interactive 3D avatar conversations
- Built a multi-language text-to-speech system supporting **25+** languages with neural voice quality by integrating **Azure** Cognitive Services API and viseme mapping for realistic avatar speech synthesis
- Created a serverless AI conversation platform with zero server maintenance and automatic scaling by leveraging **Next.js API** routes, **Google Gemini LLM**, and edge computing for seamless user interactions

4Sight | Next.js, Typescript, Tailwind CSS

May 2025

- Built an at-home **vision screening web app**, focused on accessible and interactive eye health testing through 3 assessments (snellen acuity, peripheral vision, gaze tracking)
- Implemented a Javascript framework built off **TensorFlow** to detect facial landmarks and track eye gaze

Awards & Honours

\$120,000 Schulich Leader Scholarship - University of Waterloo Recipient

Jun 2025

DECA International Career Development Conference (ICDC) - 5th Place Internationally

Apr 2025

University of Waterloo Canadian Computing Competition - Certificate of Distinction

Feb 2025