Max Liao

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Education

Student At University of Western Ontario May 2028
Honors Specialization in Computer Science
Relevant Courses: Data Structures and Algorithms, Calculus, System Programming

Projects

Twitter Clone | *Next.js, Supabase, TailwindCss, TypeScript, Node.js* January 2026
- Built a full-stack Twitter-style social platform using Next.js and Supabase, supporting user accounts, tweets, likes, replies, profiles, and timeline feeds
- Implemented secure authentication and authorization with Supabase Auth, email verification, Row Level Security (RLS), and protected server actions
- Deployed on Vercel with optimized environment configuration, server components, and production builds for scalability and performance
- Designed a normalized PostgreSQL relational schema using primary keys, foreign keys, unique constraints, and cascading deletes

Online Multiplayer Chess Game | *Socket.io, Next.js, TypeScript, TailwindCSS, Render, Node.js* June 2024
- Developed an online two-player chess application with real-time move synchronization and in-game chat using WebSockets
- Integrated a hosted WebSocket server on Render to manage live game state updates between connected clients
- Built responsive UI components in Next.js to handle player turns, board updates, and multiplayer sessions

NutriTrack | *API, JavaScript, CSS, HTML* February 2025
- Developed an automated self-heating sidewalk system at Queen's Hackathon using Arduino, Peltier plates, ultrasonic sensors, and control logic to detect weather and trigger heating or cooling
- Implemented real-time height measurement with ultrasonic sensors to scale heating output based on snow accumulation
- Integrated weather API forecasting to proactively activate heating before snowfall begins
- Used piezoelectric plates to harvest kinetic energy from footsteps and store it in batteries to improve system efficiency

Electra | *C, C++, Python* February 2025
- Developed an automated self-heating sidewalk system at MakeUofT using Arduino, Peltier plates, ultrasonic sensors, and control logic to detect snow buildup and trigger heating
- Implemented real-time height measurement with ultrasonic sensors to scale heating output based on snow accumulation
- Integrated weather API forecasting to proactively activate heating before snowfall begins
- Used piezoelectric plates to harvest kinetic energy from footsteps and stores it in batteries to improve system efficiency

Skills

Languages: Python, C++, C, Java, TypeScript, JavaScript, SQL, Bash
Technologies and Tools: React, PostgreSQL, AWS, Node.js, Spark, Snowflake, Next.js, Git