Ricky Tang

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Education

University of Waterloo Sep. 2025 – Apr. 2030

Honours Bachelor of Software Engineering (Co-op)

Experience

Brick Works Academy Jun. 2024 – Jul. 2024

Co-op Camp Counselor *Waterloo, ON*

- Led robotics programming instruction for 20+ campers across 3 age groups, teaching innovative Python integration with LEGO Mindstorms hardware
- Mentored 7-person collaborative robot development project resulting in functional writing automation robot
- Designed 10+ programming challenges focusing on sensor control, optimizing motor and structure power efficiency, and basic debugging techniques

Projects

FitSage – AI-Powered Fitness Diary App | *Next.js, Supabase, Gemini, HuggingFace, Web Speech API, Tailwind CSS*

- Built fitness app reducing workout logging time by 5-10x through voice and text input, eliminating need for manual data entry across multiple apps
- Engineered AI pipeline processing unstructured diary entries through Gemini to extract exercises and generate personalized training suggestions
- Created dashboard with body metrics, weekly charts, and workouts page displaying history with AI advice
- Implemented workout curation analyzing recent activities to suggest 10+ tailored exercises and detect gaps

Post-It – AR Sticky Notes for Real World | *TypeScript, Snap Lens Studio*

- Engineered Spectacles lens enabling users to place 3D sticky notes anchored in real-world locations using World Query Module and Spatial Anchors API
- Built voice-to-3D pipeline: ASR module transcribes speech, Gemini optimizes prompts for accuracy, Snap3D generates 3D objects
- Integrated gesture-based interactions via SpectaclesInteractionKit for intuitive note placement and voice activation
- Shipped in 32 hours, achieving semi-finalist at Hack the North 2025 (top 32 out of 256 teams)

CheFlow – Interactive Culinary Management System | *Processing, G4P (GUI Library)*

- Engineered recipe management app suggesting meals based on available ingredients and time constraints, solving daily cooking decision fatigue
- Developed ingredient-matching algorithm using set intersection and scoring system to maximize pantry utilization and minimize grocery trips
- Created data visualizations (scatter plots, regressions, heatmaps) for cooking habit analytics
- Architected interactive GUI with Processing's G4P library for streamlined recipe entry and meal planning workflows

SwiftNotes – Rewarding Encrypted Note App | *Processing, G4P (GUI Library)*

- Led 3-member team developing secure note-taking app with tabbed organization and customizable themes
- Engineered password protection for notes and reliable auto-save preventing data loss
- Crafted intuitive tabbed interface with theme/font customization for comfortable long-term usage
- Designed gamified writing rewards system promoting consistent note-taking habits through positive reinforcement

Technical Skills

Languages: C++, Python, JavaScript, TypeScript, C, SQL, Processing, HTML, CSS, LaTeX
Technologies: React, Next.js, Express, Node.js, Tailwind CSS, shadcn/ui, daisyUI, Supabase, MongoDB, HuggingFace, Pandas, Web Speech API, Qt, Motion Canvas
Development Tools: Git/GitHub/GitLab, Vercel, CMake, Lens Studio, Figma

Awards

- Canadian Team Mathematics Contest: 3rd Place Nationally (2025)
- Euclid Mathematics Contest: Top 5%, Distinction (2025)
- Canadian Senior Mathematics Contest: Top 2%, Distinction (2024)