Amit Weis

Mechatronics Engineering Student

🌐 amitweis.com ✉ amitweisgor@gmail.com in linkedin.com/in/amitweis

Education

University of Waterloo   **3.95 GPA**
Candidate for Bachelor of Applied Science in Mechatronics Engineering
Graduation expected April 2030

Experience

Junior Software Developer at **Packet39**   **Jan 2023 - Present**
- Annotated data for a custom augmented reality engine that combined machine learning and computer vision for the Rod Laver Tennis Arena in Melbourne, Australia.
- Optimized Materials for an augmented reality exposure therapy app for PTSD patients at the Wayne State University hospital that won the "XR Healthcare Solution of the Year" at the AIXR EuropeXR Awards 2025.

Software Team Member at **Waterloo Biomechatronics**   **Jan 2026 - Present**
- Establishing ROS2-based simulation framework for the Applied Collegiate Exoskeleton competition
- Designing a gait-prediction algorithm using Kalman filtering
- Developing a FreeRTOS-based high-frequency control loop on an STM32 microcontroller

Co-Lead at **MechMania**   **May 2024 - May 2025**
- Managed a team of over ten people and oversaw several parts of the event planning process including website design and development, logistical organization and sponsor communications.
- Ran a free-of-charge robotics competition at the University of Waterloo's PSE (formerly E7) with over 120 competing students and established a returning event now entering its third consecutive year.
- Raised several thousands of dollars via sponsor outreach.

Projects   *see website portfolio for more info on projects*

Bttrpie   **Nov 2025**
- Designed and built a mini-pool table with an automatic and autonomous ball sorting system using a 3-axis gantry and a grabber claw.
- Implemented PID motion control for a 3-axis rack-and-pinion gantry that has accurate blind positioning
- Designed all mechanical components in SolidWorks and validated the physical design through SolidWorks motion and structural simulations.

ARmatica   **May 2025**
- Built an augmented reality hardware prototyping assistant that overlays 3D circuit schematics onto physical breadboards using an 11-gram tracking module.
- Developed a Flask backend to automatically convert 2D electrical schematics into 3D spatial models and a web application for schematic uploads.

3D-Snake   **Jan 2025**
- Designed and implemented a physical 3D Snake game on a $5\times5\times5$ LED matrix cube within a strict one KB memory constraint on an Arduino Mega
- Engineered a multiplexed LED addressing and control system to simulate a real-time volumetric display.

Summary Of Skills

Design: SolidWorks CAD, Motion Simulation, Structural Analysis, Design For Manufacturing,
Software Development: Unity, C++, Python, Unix Command Line, Embedded Systems Programming
Computer Science: AR Development, Machine Learning, Data Annotation, 3D Spatial Modeling
Hardware: Circuit Design, ROS2, freeRTOS, STM32, Hardware Prototyping, PCB Design
Communication: Team Leadership, Sponsorship Acquisition, Public Speaking, Budget Management