

# Noah Sun

nn2sun@uwaterloo.ca  
github.com/LegendaryArk

Mechatronics Engineering Student at University of Waterloo

## Education

University of Waterloo - BAsC. of Mechatronics Engineering

September 2025 – April 2030

## Skills

- **Languages/Frameworks:** C++, C, Java, Python, JavaScript, TypeScript, Dart, HTML5, CSS3, Flutter, FastAPI
- **Developer Tools:** SolidWorks, Fusion 360, AutoCAD, Git, Firebase, Linux, Figma, CNC Machining, MS Office

## Experience

**V5RC Robotics Coach** – Mi3L Schools | *C++, Fusion 360, CNC Machining* July 2024 – August 2025

- Coached two world class teams who went on to win numerous awards at both local and international events.
- Taught advanced programming systems and algorithms (odometry, robot vision systems, library structure) and mechanical design techniques that the teams utilized to succeed throughout the season.

**FTC Team Software Lead** – Bayview Secondary School | *Java, Fusion 360, Git* July 2024 – June 2025

- Led 5 programmers to develop a library that precisely controls a 2-axis arm and efficiently maneuvers with a mecanum drivetrain, winning the Control (programming) Award.

**V5RC Team and Software Lead** – Checkmate Robotics | *C++, Git, Fusion 360, CNC Machining* June 2019 – May 2025

- Coordinated and provided technical guidance to teams of 2-6, achieving the Create (innovation) Award at VEX Worlds 2024.
- Engineered and deployed ArkLib, enabling the team to qualify for VEX Worlds in 5 consecutive years and achieve the Think (programming) Award at an international event.

**VAIC Team Embedded Systems Lead** – Mi3L Schools | *C++, Git, Linux, Fusion 360, Python* May 2024 – June 2024

- Developed the API for the VEX brain to interface with the NVIDIA Jetson Nano Module and Intel DeepSense Camera, winning the Innovate Award and Skills World Champion at VEX AI Worlds 2024.
- Diagnosed and resolved critical issues by analyzing source code, enabling communication between the VEX brain and Jetson Nano.

## Projects

**Elapse** – Lead Frontend Developer | *Dart, Flutter, Git, Firebase, Figma, Typescript* July 2024 – August 2025

- Led a team of 4 frontend developers to create a tournament companion app for VEX Robotics teams focusing on the user experience.
- Developed novel features like adaptive match times and scouting forms, leading to a 4.8-star rating from 20+ community reviews.
- Delivered a public release in 3 months and has reached 3200+ downloads across the App Store and Google Play Store.

**ArkLib** | *C++, Git* June 2020 – March 2025

- Modularized odometry and motion control algorithms using OOP, enabling seamless integration of 5+ robot configurations.
- Enhanced motion algorithms for reliable precision, achieving at least 1" and 1° accuracy via improved tuning and settling conditions.

**Mentorful** | *Dart, Python, Flutter, FastAPI, Git* July 2025

- Developed interactive learning modules using Flutter and FastAPI to support rehabilitation efforts and reduce recidivism.
- Implemented personalized reminders and tasks synced with Google Calendar API and a scoring system to keep users engaged.

**Boggle** – Team Lead | *Java, Git, Figma* May 2024 – June 2024

- Led a 4-person team to create a digital version of Boggle, meeting all deadlines by optimizing project timelines with Gantt charts.
- Integrated backend modules (word validation, game logic, etc.) seamlessly with the frontend UI implemented with JavaFX.
- Engineered an AI opponent using recursive searching algorithms to provide varying levels of difficulties, enhancing replayability.