

## Alexander Montesinos

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### EDUCATION

- University of Michigan Dearborn** - BS, Computer Engineering MAY 2029 (EXPECTED)
- Wolverine Pathways Scholar
- Detroit Cristo Rey High School** JUNE 2025
- GPA: 3.5
  - Dual Enrollment (UDM & WCCCD), AP & Honors Student, National Honors Society, Varsity Wrestler
  - MIT Introduction to Technology, Engineering, and Science (MITES) - Summer '24 Alumni

### WORK EXPERIENCE

- Orange Sparkle Ball, Inc.** - Mobility and Robotics Intern JULY 2025 - PRESENT
- Oversaw Downtown Detroit robot pickups** for safe handoffs of materials between customers and robots.
  - Documented operational failures and completed Airtable forms after each scheduled pickup.
  - Assisted with impact data tracking and dashboard maintenance, flagging inconsistencies for follow-up.
- University of Michigan Engineering Zone** - Software & Electrical Mentor JUNE 2025 - PRESENT
- Mentor high school students in Java foundational programming and guide students into applied robotics coding using WPILib, REV Swerve Drive, and multiple mechanisms.
  - Lead students through wiring, troubleshooting, and hardware integration with CAN bus, encoders, and motor controllers.
  - Guided students on using AdvantageScope for live data visualization, code simulation, and logging diagnostics.
- General Motors (Global Manufacturing Electrical & SDV)** - High School Intern OCT 2023 - MAY 2025
- Only intern to support the Automotive Manufacturing & Electrical College (AMEC)** team in vehicle first time quality.
  - Supported the training stands build for hands on learning with wire harnesses, terminals, and CPAs.
  - Assisted onboarding Electrical & SDV new hires and guided them through an introduction to the AMEC curriculum.
- iCode School Novi** - Senior Instructor JUNE 2022 - AUG 2023
- Taught beginner to intermediate courses in Python, Java, HTML/CSS, and Scratch to elementary and middle school students.
  - Led and adapted electronics and hardware courses in breadboarding, circuits, and Arduino projects.
  - Instructed classes on game development, vex robotics, 3d-printing, and astronomy.
  - Contributed to curriculum adaptations for improved classroom engagement and easier class instructions for future instructors.

### EXTRACURRICULAR

- FIRST Robotics Competition Team 5577** - Co-Captain AUG 2021 - MAY 2025
- Led a group of 10+ students and oversaw all software, electrical, and pneumatics systems integration.
  - Led the implementation of team's first swerve drive system** with functional swerve kinematics, path planning, and closed-loop control and developed autonomous routines using swerve drivetrain odometry and robot localization via AprilTags and Limelight which enabled real-time field position tracking.
  - Developed automated command sequences for dynamic shooting calculations and auto alignment using AprilTag recognition and retroreflective tracking.
  - Ran team hosted workshops and summer camps on programming and electrical systems for middle and high school students.

### VOLUNTEER WORK

- FIRST Robotics** - Control Systems Advisor NOV 2021 - PRESENT
- Serve as a control systems advisor at *FIRST* middle and high school robotics competitions, providing guidance and technical support to teams.
  - Troubleshoot and resolved complex system issues in real-time during competitions, helping teams overcome challenges and perform at their best.
- Motor City Alliance** - Controls Specialist AUG 2021 - MAY 2025
- Student lead and founding member of nonprofit "The Motor City Alliance" in **sustaining robotics programs in Detroit with over 90+ elementary, middle, and high school teams.**
  - Assisted in coordinating volunteers for key events like kickoffs, workshops, and competitions.
  - Provided hands-on guidance to middle school robotics teams on programming and electrical troubleshooting.
- FIRST Robotics** - Student Mentor SEP 2017 - NOV 2024
- Volunteered as a mentor for the *FIRST* robotics team at Escuela Avancemos Elementary School (*FLL*).
  - Mentored Holy Redeemer's *FIRST* robotics middle school team (*FTC*).

### AWARDS

MITES Top Team in Electronics (2024), *FIRST* Dean's List Award Semi-Finalist (2024), *FIRST* Young Student Mentor Award (2023)

### SKILLS

Bilingual: English & Spanish, Java, MS Office Windows, VS Code, Git, Version Control, Open-source Collaboration, Self Learning