

# Alexandru Otlacan

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## EDUCATION

### University of Michigan, Ann Arbor, MI

April 2027

Robotics Engineering B.S.E, Music Minor

- **Related Coursework:** Computational Linear Algebra, Human-Robot Systems, Programming and Intro Data Structures, Multivariable & Vector Calculus, Introduction to Logic Design, Robot Dynamics and Simulation, Simultaneous Localization and Mapping (SLAM) & Navigation, Intro to Logic Design\*, How to Build Robots and Make Them Move\*

### Warren Mott High School, Warren, MI

September 2019 - June 2023

GPA - 4.22

- **Extracurriculars:** Camp Restore Detroit Tutoring, National Honor Society, Warren Mott Marching Band, FIRST Robotics Team 818
- **Leadership:** Lead Scout and Design, Drum Major

## EXPERIENCE

### Undergraduate Research Assistant

Ann Arbor, MI

Zoetic Robotics Lab

October 2025 - Present

- Designed, prototyped, and benchmarked soft robotic mechanisms enabling multiple locomotion modes (high-speed crawling, jumping, and passive mobility)
- Utilized CAD Fusion 360 to optimize robotic performance
- Conducted rapid prototyping with FDM 3D printing for microcontroller integration

### Mechanical and Design Robotics Mentor

Ann Arbor, MI

First Robotics Team 830 - The RatPack Robotics

January 2024 - Present

- Guided technical assistance to 30+ high school students during a two-month FRC build season, overcoming engineering, logistical, and management challenges to completely a functional robot for competition
- Trained students to utilize CNC mills and 3D printers to manufacture and optimize robot components, reducing assembly and manufacturing time by 50% by creating custom aluminum brackets and frames
- Wrote a VBA program in Microsoft Excel to analyze match data, enhancing team strategy and contributing to a 30% increase in win rate during competition
- Optimized motion profiles and PID controllers to enhance robot precision and responsiveness
- Trained students in Fusion 360 and OnShape guiding development of 3D prototyping and manufacturing

### Computer Consultant Fellowship

Ann Arbor, MI

Duderstadt Ground Connection

October 2024 - Present

- Earned certifications in a wide range of machinery, including Bantam CNC, Epilog Laser Engraver, FDM printers such as Bambu Labs A1 mini and P1S, Prusa Mk4s, and BigRep Studio G.2., SLA printers such as Stratasys J850 and Formlabs Form 3.
- Managed customer fabrication projects, ensuring accuracy and quality in handling parts for university and external clients
- Conducted troubleshooting and maintenance for fabrication equipment after every print, minimizing downtime and improving operational efficiency
- Consulted high-level design feedback and quotes for customers, helping finalize part specifications, advising on material use, resolution, and cost trade-offs

### Lead Scout and Design

Warren, MI

FIRST Robotics Team 818 - The Steel Armadillos

October 2019 - June 2023

- Developed first version of offline scouting system, improving data collection and analysis during competition by 200%
- Designed and built a custom training device incorporating components from all shop tools, ensuring students were proficient in machining and assembly during build season
- Delivered weekly speeches to entire team, providing progress updates on sub-team activities to foster alignment across sub-teams

## MEMBERSHIPS

### Michigan Marching Band

August 2023 - Present

- Performed at national events, including home football games in the Big House and the Rose Bowl
- Collaborated with 400+ band members, demonstrating discipline, teamwork, and time management
- Served on the Sustainability Committee, supporting campus-wide environmental initiatives

## SKILLS

- **Programming Languages:** C++, HTML, CSS, Java, JavaScript, LUA, Python, MATLAB
- **Software:** OpenAI, Llama 3, Google Gemini, Microsoft Copilot, Arduino, Autodesk Fusion 360, OnShape, Cura, Prusa, Bambu Lab, SolidWorks, Blender, Google Firebase, Google Script, Microsoft Excel, VBA, Adobe Illustrator, Adobe Photoshop, Adobe Premiere, Adobe Lightroom, Materialise Magics, GrabCAD, PreFORM, Asiga Composer, Creality, Git/Github, ROS2, R
- **Machines:** CNC Mill, Bantam CNC, BigRep Studio G2, Stratasys J850, Epilog Fusion Pro Laser Cutter/Engraver, Soldering, 3D Scanner, Prusa MK4, Creality Printers, Formlabs 4 Resin Printer, Sewing Machine, Cricut Maker, Creality Ender 3 V3 3D