

# Alexandru Otlacan

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## EDUCATION

### University of Michigan, Ann Arbor, MI

September 2023 - 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
- **Activities:** Michigan Marching Band Alto Saxophone, Sustainability Committee

### 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
- **Leadership:** Lead Scout and Design, Drum Major

### Macomb Mathematics Science and Technology Center, Warren, MI

September 2019 - May 2023

GPA - 4.22

### Macomb Community College, Warren, MI

August 2021 - April 2023

General Studies, GPA - 4.00

- Dual Enrollment College Courses

## EXPERIENCE

### Mechanical and Design Robotics Mentor

Ann Arbor, MI

First Robotics Team - 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

### Lead Scout and Design

Warren, MI

FIRST Robotics Team - 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

### 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.
- Instructed students in using fabrication studio equipment, providing hands-on guidance with 3D printing, machining, and workspace tools
- 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

## 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
- **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,
- **Other:** Design for Manufacturing (DFM), Technical Writing, Public Speaking, Presentation, Rapid Prototyping, User Testing and Feedback integration, Mentorship, Instructional Aid