ADAM ABARAHAM

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PROJECTS

PuppyPi

- Quadrepedal robot dog that can be controlled with a remote control or autonomously with computer vision
- Developed for research in data acquisition of various surfaces and terrains to optimize quadrapedal robot navigation
- Created using **Python and Raspberry Pi**

Cyberbot

- Autonomous robot vehicle that navigates a maze and avoids obstacles with computer vision
- Developed for research to encorporate machine learning into the navigation system of vehicles
- Created using **Python, Micro:bit and Pixy2 Camera**

Heat Exchanger

- Tube-in-tube heat exchanger to cool an ethylene glycol water mixture
- Investigated the effect of inlet temperature on the required mass flow rate in a heat exchanger
- Created using **MATLAB and LaTeX**

Stress Analysis

- Mechanics of Materials analysis of principle stresses and strains, deflection, and buckling effects
- Investigated the effect of various loading conditions on the stress and strain of cantilever beams
- Created using **Excel and LaTeX**

Trebuchet

- Floating arm trebuchet optimized for maximum distance, employed in the siege of Sterling Castle.
- Achieved a projectile launch of **7+** meters resulting in the destruction of **80%** of Sterling Castle.
- Created using **CATIA and LaTeX**

Iron Ring

- Manufactured an iron ring using Drill Chucks, Parting Tools, and Live Centers
- Achieved a surface finish of **0.8** micrometers and a dimensional tolerance of **0.1** millimeters
- Created using **Lathe**

Robot Car Track

- Robot car track used in testing of autonomous robot cars for the University of Windsor Mechatronics lab
- Enhanced robot car track, increasing size by **90%** and introducing new environmental decorations
- Created using **Inkscape**

EXPERIENCE

Supplier Quality Engineer

Valiant TMS   May 2024 - September 2024

- Ensured supplier compliance with **ISO 9001** standards and design specifications through NCRs, part inspections, and performance analysis using **SAP** and **Excel**

Research Assistant

University of Windsor   September 2023 - April 2024

- Conducted research and development in **robotics, sensors, and computer vision**
- Developed **Python** libraries for seamless integration with **Cyberbot** and **PuppyPi**

Manuscript Reviewer

Manning Publications   December 2023 - Present

- Reviewed **Neural Networks** section of liveproject **Four AI Algorithm Projects** by Rod Stephens
- Reviewed book **Django in Action** by Christopher Trudeau

President

University of Windsor Board Games Club (UWBGC)   February 2021 - June 2022

- Grew club membership to **300+** members with **in-person, DnD, MTG, and online** events
- Developed **teamwork**, **management**, and **communication** skills in a diverse environment
- **Most active** club in the **University of Windsor** with **100+** events per year

SKILLS

Engineering: CATIA, Inventor, AutoCAD, SAP, Excel, MATLAB, LaTeX, C/C++, Arduino
Development: Java, Ruby, PostgreSQL, MongoDB, HTML, CSS, Javascript, React, Svelte, Next.js
IT Operations: Python, Go, Bash, Linux, AWS, Docker, Kubernetes, Terraform, Ansible

EDUCATION

Bachelors of Applied Science in Mechanical Engineering with Co-op Designation

University of Windsor   September 2021 - August 2025