## Alan Tondryk

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EDUCATION - University of Michigan		
BSE Computer Engineering   GPA: 3.65/4.00	Ann Arbor, MI	2019 - 2023
MSE Embedded Systems   GPA: 4.00/4.00	Ann Arbor, MI	2023 - 2024
WORK EXPERIENCE		
Qualcomm   Software Engineer	San Diego, CA	Aug 2024 - Present
<ul> <li>Windows on ARM work which involves chipset bringup, bo</li> </ul>	ot flow, crash dump analysis a	and triage, and tools
development, maintenance, and deployment.		
Advanced Embedded Systems   Graduate Student Instructor	Ann Arbor, MI	Sept - Dec 2023
<ul> <li>Students work on weekly labs and a design project involvir</li> </ul>	ng PCB design, low-level progr	amming, API design, linux
device drivers, RTOSs, and more. I taught lab sections, offic	ce hours, created a KiCad lab,	and consulted.
Qualcomm   Embedded Software Engineer Intern	San Diego, CA	Summer 2023
<ul> <li>Continued the development of my C++ crash dump parsing</li> </ul>	g tool library from last summe	r utilizing a COM-standard
interface for the API. This was important as both Qualcom	m and its vendors would use t	his library. I added unit
tests using the Catch2 framework to verify my software. A	fter my program passed all tes	st cases and was built in
Qualcomm's build environment, it was added to the main	repository.	
Qualcomm   Embedded Software Engineer Intern	San Diego, CA	Summer 2022
<ul> <li>Qualcomm Engineers use a parsing tool for retrieving infor</li> </ul>	mation from memory crash d	ump binary files. I
updated this tool by adding data driven elements such as $\lambda$	(ML based chipset specificatio	ons that were read at
runtime. This greatly increased engineering operations by	removing the need to recomp	ile the tool source code
for new chips.		
• Later in the internship, I prototyped a rewrite of the tool fr	rom C# to C++ and from a stan	dalone executable to a
dynamically linked library. A library format allowed for futu	re integration with the existir	ng windows debugger or
any other executable. I created a test executable compiled	against this library to showca	se functionality and
usage, and presented my work to my team.		
PROJECT EXPERIENCE		
Michigan Mars Rover   Embedded Software Engineer	Ann Arbor, MI	2019 - 2024
• 1st Place at two international robotics competitions (URC a	and CIRC).	
<ul> <li>Developed FreeRTOS on STM32 chips for Astrobiology task</li> </ul>	s on the rover.	
Configured a Linux image and CMake for integration with c	our ROS based system. This all	owed me to implement a
drive program and state machine in Python for our CAN-ba	ased motor controllers and de	ploy it on a Raspberry Pi.
<ul> <li>Worked on bridge programs between the main onboard control</li> </ul>	omputer, STM32 Nucleo board	ls and Beaglebones, in
order to enable our science team to perform life detection	tasks.	

• Parsed UM7 inertial measurement unit binary packets and NMEA sentences over UART, enabling our navigation team to perform localization.

## Wearable Rangefinder

 Designed a wrist-mounted 3D printed device to measure and display distance to users. A custom PCB provides 3.3V and 5V power from a 9V battery to power the STM32 processor, LiDAR, and oled screen. A new version features a real time operating system- FreeRTOS, USB-C rechargeable LiPo battery, faster display rates over SPI.

## Force Feedback VR Gloves | Haptic HandsAnn Arbor, MISept - Dec 2022

• Led a team in the design of Haptic Hands, low cost wireless, wearable gloves with haptic feedback to be used with existing VR systems developed for the Advanced Embedded Systems course at U of M. It consists of motors and potentiometers controlled by an STM32 processor, packaged on a custom designed PCB. I worked on PCB design, CAD and 3D printing, component interfaces in C, simulation, budget allocation, and more.