

BRAM LOVELACE

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EDUCATION

Purdue University Master of Science in Electrical and Computer Engineering	Jan 2024 - May 2027
Purdue University - Honors College West Lafayette, IN Bachelor of Science in Mechanical Engineering - <i>with distinction</i> Minor in Classical Studies	Aug 2019 - May 2023 GPA: 3.90/4.0
University of Bristol - Study Abroad Bristol, UK	Jan - Jun 2022

WORK EXPERIENCE

Microsoft - Reliability Engineer Redmond, WA	Aug 2023 - Present
<ul style="list-style-type: none">Engaged with partners and suppliers to ensure hinge and connector reliability across 10 products including FMEA and creating and updating specifications for 7 different connectorsDiagnosed hinge failures in abuse scenarios, reducing failure rate to below reliability budgetDeveloped fixtures and tests for and managed testing of 100+ keyboards to recreate failure mode of field issue and validated change that will be implemented as a solution	
Microsoft - Mechanical Engineering Intern, Hardware Reliability Redmond, WA	Jun - Aug 2022
<ul style="list-style-type: none">Developed a frequency domain analysis tool in Python to identify a correlation between different factory tests using experimental and FEA resultsPerformed mechanical shock and drop testing to validate simulation methods, test repeatability, and characterize system response resulting in meeting sustainability and reparability goals	
Collins Aerospace - Manufacturing Engineering Intern Fairfield, CA	May - Aug 2021
<ul style="list-style-type: none">Designed and updated tools in Solidworks to improve the process and efficiency of energetics manufacturing for aircraft safety systemsAnalyzed part numbers using Excel VBA to ease upgrade of tool management systems	

TECHNICAL EXPERIENCE

Assistive Device for Peripheral Neuropathy West Lafayette, IN	Jan - May 2023
<i>1st in Malott Innovation Award out of 68 capstone design teams</i>	
<ul style="list-style-type: none">Developed, simulated, tested, and iterated an adaptable device that assists patients with sensory issues by providing wireless vibrotactile feedback from sensor inputDesigned custom PCBs in KiCAD to streamline and miniaturize device electronics	
FIRST Robotics Competition Team 900 Durham, NC	Aug 2015 - Aug 2019
<i>CAD & Mechanical Lead</i>	Aug 2017 - Aug 2019
<ul style="list-style-type: none">Managed robot design and construction by assigning tasks and developing key assemblies and organized parts manufacturing and requisition to maintain a tight 6 week build scheduleCreated a curriculum for Solidworks and Onshape to introduce new students to CAD	

SKILLS & CERTIFICATIONS

HARDWARE: CNC Machining, 3D Printing, Soldering	Fundamentals of Engineering (FE) Mechanical
SOFTWARE: MATLAB, Python, C, Java, VBA, JMP,	Certified Solidworks Professional (CSWP)
Fusion360, Creo, Abaqus, Simplify3D, Cura, KiCAD,	CSWP - Advanced Sheet Metal
FEA, Solidworks, OnShape, Catia, ArcGIS, LaTeX,	Solidworks Sustainable Design Associate
LabVIEW, Git, Linux, Office, Weibull++, VSCoDe	FCC Licensed Amateur Extra Radio Operator
	Wilderness First Responder (WFR)

ACTIVITIES

Cascade Grotto, National Speleological Society - Secretary Seattle, WA	Jan 2024 - Present
<ul style="list-style-type: none">Organized events, minutes, and a newsletter to engage and train people to cave safelyExplored and discovered caves with teams across the US, finding and surveying over 3km of un-mapped passage across 15+ caves in 8 states	