

BRAM LOVELACE

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EDUCATION

Purdue University	Jan 2024 - May 2027
Master of Science in Electrical and Computer Engineering	
Purdue University - Honors College West Lafayette, IN	Aug 2019 - May 2023
Bachelor of Science in Mechanical Engineering - <i>with distinction</i> Minor in Classical Studies	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
• Engaged with partners and suppliers to ensure hinge and connector reliability across 10 products including FMEA and creating and updating specifications for 7 different connectors	
• Diagnosed hinge failures in abuse scenarios, reducing failure rate to below reliability budget	
• Developed 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
• Developed a frequency domain analysis tool in Python to identify a correlation between different factory tests using experimental and FEA results	
• Performed 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
• Designed and updated tools in Solidworks to improve the process and efficiency of energetics manufacturing for aircraft safety systems	
• Analyzed 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
1st in Malott Innovation Award out of 68 capstone design teams	
• Developed, simulated, tested, and iterated an adaptable device that assists patients with sensory issues by providing wireless vibrotactile feedback from sensor input	
• Designed custom PCBs in KiCAD to streamline and miniaturize device electronics	
FIRST Robotics Competition Team 900 Durham, NC	Aug 2015 - Aug 2019
CAD & Mechanical Lead	Aug 2017 - Aug 2019
• 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 schedule	
• Created a curriculum for Solidworks and Onshape to introduce new students to CAD	

SKILLS & CERTIFICATIONS

HARDWARE: CNC Machining, 3D Printing, Soldering
SOFTWARE: MATLAB, Python, C, Java, VBA, JMP, Fusion360, Creo, Abaqus, Simplify3D, Cura, KiCAD, FEA, Solidworks, OnShape, Catia, ArcGIS, LaTeX, LabVIEW, Git, Linux, Office, Weibull++, VSCode

Fundamentals of Engineering (FE) Mechanical
Certified Solidworks Professional (CSWP)
CSWP - Advanced Sheet Metal
Solidworks Sustainable Design Associate
FCC Licensed Amateur Extra Radio Operator
Wilderness First Responder (WFR)

ACTIVITIES

Cascade Grotto, National Speleological Society - Secretary Seattle, WA	Jan 2024 - Present
• Organized events, minutes, and a newsletter to engage and train people to cave safely	
• Explored and discovered caves with teams across the US, finding and surveying over 3km of unmapped passage across 15+ caves in 8 states	