SEAN SAFAR

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EDUCATION

PURDUE UNIVERSITY **West Lafayette, IN**

Bachelor of Science in Electrical and Computer Engineering with Certificate in Entrepreneurship May 2023

Relevant Coursework: Microprocessor Systems and Interfacing, Digital System Design, Signals and Systems, Electromechanical Motion, Electrical Engineering Fundamentals I and II, Electrical and Magnetic Interactions, Electromagnetics, Differential, Multivariate, and Integral Calculus, Spatial Analysis (3D), Power Equipment, Embedded Systems, Probabilistic Methods, Entrepreneurship/Innovation

CORE QUALIFICATIONS

Electrical, Computer, and Mechanical Engineering

Technical Skills: CAD (Solid Works, KiCad, AutoCAD, CATIA, LTspice, Ultimaker), Programming (Ladder Logic, Studio 5000, MATLAB, C, Python, System/Verilog, Assembly), HMI Design (FactoryTalk View, GP-Pro EX, Rockwell Automation Software), Networking and OPC (RSLINX/FactoryTalk LINX), PLD's and PLC's, Arduino, Raspberry Pie, Form 3, Creality, Machining/Welding, and Microsoft Office

WORK EXPERIENCE

FLEXIV ROBOTICS, INC **Santa Clara, CA**

Mechatronics Internship, Product Design Engineer May 2022 – Aug 2022

- Project X – Achieved a unique robotic arm product enabled by delivering an advanced modular test system for product development resulting in unprecedented research and testing capabilities generating real-time post processing analytical data
    - Engineered and fabricated 3-D printed total internal reflection fixture with modular adjustment for RPI Camera
    - Coded and implemented image processing program with filter & contour detection, distortion & warping calibration, and live image display of test field with area and pixel intensity calculation for enhanced post examination
    - Integrated s-type load cell into fixture design with in-line spring for system noise dampening producing live synched force data
    - Integrated linear actuator implementing force governed speed control producing absolute control over test force curve
- Project CNC – Completed software & electrical hardware design and implementation for custom two-axis CNC machine replacing an outsourced production system with a compact desktop design yielding improved performance and ease-of-use
    - Design and build of electrical two-axis CNC machine layout with compact design outlined and integrated cooling, motor drivers, auxiliary power, safety measures, and limit switches controlled through I/O FPGA and STEP/IO cards
    - Optimized, configured, and tested servo-controlled CNC machine with Linux software resulting in optimized product fabrication and quality. The design is more compact, energy efficient, and expands lifespan of the product

BRIDGESTONE AMERICAS, INC **Morrison, TN**

Electrical and Computer Engineering Co-op, Manufacturing Engineer May 2021 – Dec 2021

- Manufacturing Optimization – Redesigned main control and safety program for cold feed extruder and breakdown mills incorporating new inputs and outputs such as selector switches, actuators, variable frequency drives, IO-Links, and 100+ new communication, safety, process, and instrument alarms across field of operation. The program generated a simplified manufacturing process with improved precision and troubleshooting leading to improved manufacturing output
- Data Analytics – Solved key programming failures troubleshooting networking issues, improving HMI designs/logic, and introducing new communication paths to instruments providing insightful solutions to management yielding sustained operational uptime

TG3 ELECTRONICS, INC **Kenosha, WI**

Electrical and Computer Engineering R&D Intern May 2020 – Aug 2020

- Project Pace – Successfully completed layout, build, and test of user interface display for next generation Stryker hospital beds. The project launched and is in the field today providing enhanced ease-of-use via display footprint, patient control features, and LED lighting
- Project Optimus – Optimized mechanical durability and launched CE-marked European control system for McDonalds Corporation

VISION PLASTICS, INC **Delavan, WI**

Quality Engineering Intern May 2019 – Aug 2019

- Spearheaded new product development through extensive prototype testing utilizing an optical comparator and coordinate measuring machine to assess and address imperfections including sink marks, splay, shorts, vacuum voids, warping, flash, and flow lines

LEADERSHIP

MICROPROCESSOR SYSTEMS AND INTERFACING **Purdue University, West Lafayette, IN**

Team Leader Apr 2022 – May 2022

- Created custom PCB design with definitive sets of algorithms programmed into STM32 microprocessor for 'Guitar Hero' style game

PURDUE LUNABOTICS **Purdue University, West Lafayette, IN**

Team Member Aug 2022 – Present

- Strengthened team-built robot to compete in a NASA hosted competition of endurance in hazards of extra-terrestrial mining operations

ADDITIONAL

Activities: Restored 1967 Crestliner, Sigma Alpha Epsilon, Community Volunteer Coach, Special Olympics Volunteer, Little League Umpire
Interests: Basketball, Baseball, Running, Piano, Antiquing, Fishing, *Star Wars*, Marvel, DC Comics, Houston We Have a Podcast, VR