NOLAN SPENCER

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GitHub: https://github.com/yardbear/MECA-470-Automated-Material-Transfer-Project

EDUCATION

California State University, Chico — Chico, CA Aug 2018 - May 2021
Bachelor of Science in Mechatronic Engineering, Minor in Computer Engineering GPA: 3.822
Shasta College — Redding, CA Jun 2016 – May 2018
Associate of Arts in University Studies: Engineering GPA: 3.838

EXPERIENCE

Quality Assurance Engineer at *EMCORE* — Concord, CA May 2021 – Present
- Perform Failure Analysis for all returned products to address customer complaints and requests
- Conduct variety of experiments to investigate root cause of product issues and possible corrective actions
- Synthesize experiment data for presentation of test results to colleagues and customers
- Write qualification design reports to validate that new products will meet published specifications

Electrical Engineering Intern at *Sierra Pacific Industries* — Anderson, CA Jun 2019 – Aug 2019
- Repaired and maintained laser scanners to optimize lumber cuts May 2020 – Aug 2020
- Improved PCB designs to extend life of scanners
- Utilized Adafruit microcontroller and INA219 current monitors to observe laser current in scanners
- Generated program in C to toggle power of lasers and prevent them from pulling too much current
- Built UL listed electrical panels and consoles used to control systems throughout the company's sawmills
- Programmed in PLC ladder logic using Rockwell Studio 5000

Electrical and Computer Engineering Tutor at *CSU, Chico* — Chico, CA Jan 2020 – May 2020
- Tutored college students both in person and via Zoom for computer and electrical engineering coursework

PROJECTS

Automated RTV Silicone Dispensing Project at *EMCORE* Aug 2022 – Present
- Develop automated process to replace current manual process of silicone dispensing in production
- Modify, design, and test new tooling for automated process using SOLIDWORKS and SLA 3D printer

Leader of Six Sigma Project at *EMCORE* Oct 2021 – Aug 2022
- Investigated root cause of failure mode for company's highest volume sensor to reduce scrap by 50%
- Performed series of tests using NI USB-4431 I/O, Zurich HF2LI Lock-in Amplifier and MATLAB for DAQ
- Collaborated with team weekly to discuss experiments attempting to explain/mitigate failure mechanism

Project Manager of Automated Material Transfer Project at *CSU, Chico* — Chico, CA Sep 2020 – May 2021
- Established simulation in virtual machine for Warthog UGV using Gazebo, RViz, and ROS Kinetic packages
- Created ROS publisher and subscriber that navigated robot to specific x and y coordinates in Gazebo
- Developed Graphical User Interface in Visual Studio Code for signal/call system using PyQt5 and Qt Designer
- Motivated group members to collaborate and meet project deadlines stated on project Gantt Chart
- Gave multiple presentations to describe project design and how it would satisfy the sponsor's requirements

Nema 23 Electric Powered Ceiling Hoist at *CSU, Chico* — Chico, CA Mar 2020 – May 2020
- Designed mechanical hoist with hand calculations and SOLIDWORKS to successfully lift a specified load
- Composed a series of detailed reports to effectively justify and explain design selections

SKILLS

- MATLAB, Python, C, Assembly Language, C++
- ROS Kinetic, RViz, Gazebo, RoboDK, CoppeliaSim
- Certified SOLIDWORKS Associate
- Visual Studio Code, PyQt5, Qt Designer
- Microsoft Office, Google Workspace and Colab
- (LT/P)Spice, Electrical Panel and Circuit Design
- Ladder Logic Programming
- Rockwell Studio 5000

MEMBERSHIPS & CLUBS

- Webmaster of HKN, Iota Zeta Chapter 2019 - 2021
- Member of HKN, Iota Zeta Chapter 2019 - 2021
- Honor Society member since 2017
- Co-Founder of High School Robotics Club in 2012
- VEX Robotics Team leader, Nov 2012 - Jun 2016
- VEX Robotics Head Referee in 2017 and 2018
- VEX Robotics Judge in 2019, 2020, and 2022