KAVAN SHAH

Robotics and Controls Engineer

kavanshah54@gmail.com (919) 637-9820 Minneapolis, MN kavanshah54

PROFESSIONAL EXPERIENCE

Automation and Controls Engineer

ALMCO

September 2023 - Present Albert Lea, MN

- Develop robust PLC control logic and intuitive HMI interfaces for part finishing manufacturing machines, using Allen-Bradley and Siemens software.
- Design and commission electrical control designs for various custom designed industrial control panels, adhering to NEC, NFPA, and UL508A standards.

Graduate Student Research Assistant

University of Michigan

January 2022 - April 2023 Ann Arbor, MI

- Spearheaded the research, development, and integration of innovative robotic manufacturing processes, leveraging multidisciplinary technical expertise.
- Demonstrated strong project management and multitasking skills by concurrently managing three diverse research projects, ensuring timely deliverables and collaboration within cross-functional teams.

RESEARCH PROJECTS

Smart Manufacturing Test-Bed

University of Michigan

May 2022 - April 2023 Ann Arbor, MI

Programmed multiple industrial robots in custom robot language for manipulation, data collection, and real-time communication in an IIoT software platform.[2] Integrated heterogeneous robotic systems, additive/subtractive manufacturing processes, and vision systems into a collaborative test-bed environment for safe human-machine interaction.[1] [1] [2]

Additive Manufacturing Digital Twin

University of Michigan

August 2022 - April 2023 Ann Arbor, MI

Designed Digital Twin framework for additive manufacturing monitoring and quality control.[1] Integrated microscopic cameras, laser scanners, CNC, microcontrollers into automated platform, enhancing process control and efficiency.[2] [1] [2] [2]

General Motors Virtual Commissioning

University of Michigan

January 2022 - December 2022 Ann Arbor, MI

Researched and published paper on bridging virtual commissioning gaps for manufacturing.[1] Developed detailed 3D manufacturing cell model enabling realistic control logic emulation.[2] [1] [2]

SUMMARY

Ambitious, motivated, and detail-oriented Robotics and Control engineer with a proven ability to tackle engineering challenges. Technically adept in data analysis, process improvement, and providing solutions. Experienced in robotics, automation, and industrial system integration.

EDUCATION

M.S. in Robotics

University of Michigan

August 2021 - May 2023

- GPA: 4.00
- Research Areas: Smart Manufacturing, Industry 4.0, IIoT, Robot Manipulation, Virtual Commissioning

B.S. in Mechanical Engineering

Pennsylvania State University

August 2017 - May 2021

- GPA: 3.98, Summa Cum Laude
- Minor: Mechatronics, Business

SKILLS

Programming / Frameworks

MATLAB, Python, C/C++, JavaScript / ROS2, OpenCV

Robots

FANUC (KAREL), Kawasaki (AS Language), KUKA (KRL), ABB (RobotStudio)

Software

MATLAB, Simulink, SolidWorks Electrical, SolidWorks, Arduino IDE, Emulate3D

PLC and HMI

Allen-Bradley (Studio 5000, LogixDesigner, FactoryTalk, CCW), Siemens (TIA Portal)

PUBLICATIONS

Full Stack Virtual Commissioning: Requirements Framework to Bridge Gaps in Current Virtual Commissioning Process.