

SHAIL DALAL

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EDUCATION

Northwestern University, Evanston – *Robert R. McCormick School of Engineering* Sept 2023 – Present
Degree – *M.S. Robotics*

University of Maryland, College Park – *A. James Clark School of Engineering* Jan 2018 – Dec 2021
Degree – *B.S. Mechanical Engineering*

TECHNICAL EXPERIENCE

Texas Instruments | Dallas, TX Jan 2023 – Aug 2023
Software Automation Developer

- Developed automation code using Autoshell and set-up network protocols for KLA and AMAT tools
- Identified and rectified a critical issue in the automation code, that was primary source of tickets and system hang-ups
- Supported the semiconductor manufacturing team by adding features to increase production efficiency

M.C. Dean | Tysons Corner, VA Jan 2022 – Dec 2022
Security and Electronics Project Lead

- Developed engineering installation design packages for Electronic Security Systems, spanning the creation of block diagrams, riser diagrams, mounting, and wiring details in AutoCAD
- Point of contact for technical queries for stakeholders of multiple projects
- Assisted in bids and proposals process to capture new projects

Chewy.com | Wilkes-Barre, PA Jun 2021 – Aug 2021
Fulfillment Center Operations Manager Intern

- Managed and coached a team of 60 employees regarding safety and work standards
- Created an Excel tracker to track safety incidents and reduce future safety incidents
- Documented and performed 5S tasks to maintain OSHA building standards

JAPS Project | Ahmedabad, Gujarat, India Jun 2019 – Aug 2019 & Sept 2020 – Jan 2021
Mechanical Engineering Co-Op

- Developed civil drawings of visited sites using AutoCAD and 3D models of overhead cranes using Solidworks
- Created automated Excel sheets to perform crane measurement calculations to increase final report productivity
- Supervised inspections of overhead cranes in field with third-party inspectors from international firms

Attune (SenseWare.co) | Vienna, VA Jun 2020 – Aug 2020
Hardware Engineering Intern

- Initialized Ozone, Carbon Monoxide, and Sulphur Oxides sensors using embedded C
- Studied airborne particulate monitoring sensor applications to aid COVID-19 pandemic

PROJECTS/RESEARCH

Pointillism Drawing Robot Arm | Evanston, IL Sept 2023 – Dec 2023

- Built a ROS package to draw pointillism art using a Franka Emika Panda arm
- Implemented canny edge detection to convert images to points to be used as waypoints
- Developed a computer vision algorithm to identify location of paint colors from robot base
- Designed a custom Python MoveIt API to execute accurate painting and dot trajectories
- Headed version control for project repository and contributed to planning and execution phases

Glass Testing Temperature Cycler | College Park, MD Aug 2021 – Dec 2021

- Prototyped a PID temperature cycler for glass testing using a Raspberry Pi
- Conceptualized and designed the controller with settings to attach different hardware for testing
- Integrated temperature changes through a webpage to remove physical presence for long term testing

Maryland MEMS & Microfluidics Lab | College Park, MD Aug 2021 – Dec 2021

- Prototyped a thermocycler for a micro PCR testing device
- Controlled thermoelectric Peltier element and Pt-RTD sensors using Arduino hardware and PID software
- Assisted on integration of the thermocycler with CMOS imager and microfluidic chip of the system

Northrop Grumman COVID-19 AI Challenge | College Park, MD (Virtual) Jan 2021 – May 2021

- Developed AI bot to provide information on COVID-19 using Keras and TensorFlow
- Integrated mask detection using OpenCV Haar Cascade Classifier and Google speech recognition API
- Collaborated with 4 students and placed 2nd among 15 participating teams

Raspberry Pi Projects | College Park, MD Jan 2021 – Apr 2021

- Utilized Python to create lane detection and facial detection module for a pre-recorded video
- Integrated Pi camera and developed a smart doorbell system that sends a text message, email, and a recorded video to the user after detecting someone in porch area

SKILLS

Software – Robot Operating System (ROS), Git, Python, MATLAB, C++, Concurrent Versions System(CVS), AutoShell, CSS, HTML, Shell Scripting (Bash), OpenCV, Linux, Solaris

Design Software – AutoCAD, SolidWorks, Autodesk Fusion 360, Autodesk Inventor, Creo, Onshape

Hardware – Raspberry Pi, Arduino, Nordic nRF52833 (Microbit), Jetson Nano