Sean Kulinski

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EDUCATION

Aug. 2019 – May 2023

PhD of Engineering in Computer Engineering

Purdue University, West Lafayette, Indiana

- *Area of Study:* Machine Learning and Artificial Intelligence with focus on Generative Models
- GPA: 3.61

Aug. 2015 – May 2019

Bachelor's of Science in Electrical Engineering

Purdue University, West Lafayette, Indiana

- *Area of Study:* Automatic Controls
- GPA: 3.14

RESEARCH EXPERIENCE

Aug. 2019 – Present

Research Assistant for Destructive Density Learners Project

Advisors: Dr. David Inouye and Dr. Saurabh Bagchi
West Lafayette, Indiana

- Using novel technique to model distributions to detect anomalies using deep density destructors.
- Developing robust models even in the event of lost or adversarially changed data.
- Creating a modular learning scheme for general machine learning which can be implemented on edge devices.

May 2018 - Aug. 2019

Lead Undergraduate Researcher for Prosthetic Haptic Interfaces Project

Advisor: Dr. Hong Tan
West Lafayette, Indiana

- Began international collaborative research project with Centro di Ricerca "E. Piaggio" Lab from University of Pisa, Italy.
- Lead experiment to test effects of proprioceptive feedback of prosthesis delivered via skin stretching for upper limb prostheses.
- Developed GUI for data collection for human subjects with automatic data parsing.
- Designed and manufactured wearable motorized device to encode the state of robotic hand.

WORK EXPERIENCE

May 2020 – Aug 2020

Machine Learning Engineer

Lawrence Livermore National Laboratory, Livermore, California

- Identified issues in state-of-the-art computer vision frameworks for detection of COVID-19.
- Built computer vision models to conquer some of these issues, such as being robust to spatial distribution shifts. The models were trained using Livermore's Sierra HPC system.
- Used Natural Language Processing techniques on parsed Material Science publications to create an interpretable deep model to aid in the discovery of new nanostructures and nanomaterials.

Jan. 2019 – Aug. 2019

Software and Embedded Electrical Engineer

Indiana Microelectronics, West Lafayette, Indiana

- Developed Genetic Algorithm to automate and optimize design of transmission zero filters for Lockheed Martin.
- Designed automated testing of temperature drift for a closed-loop linear piezoelectric motor.
- Oversaw testing, calibration, and reworks for a phased-array filter system.

SKILLS

Programming Languages and Frameworks: Python, MATLAB, C, LaTeX, Bash, Batch, VBA, Git, GitHub, Octave, Numpy, Pandas, Scikit Learn, Pytorch, Keras, Scipy, OpenCV, Excel, , Linux, Jupyter, Anaconda, Altium, EagleCAD, OrCAD, CATIA

More Skills: Leading and working within teams, strong mathematics background, stastics, data analysis, Microsoft Office, product research and design

LEADERSHIP AND ACTIVITIES

2015 - Present

Presentor at Purdue's ML Reading Group, Led teaching sessions involving Python and Altium, Executive Board of Alpha Tau Omega Leadership Development Fraternity (2017), Volunteer at Natalie's Second Change Dog Shelter (Present), Eagle Scout and Avid Backpacker (Present)