

Sean Kulinski

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📍 400 N. River Road Apt. 1002
West Lafayette, Indiana, 47906

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 in Generative Models
- GPA: 3.67

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

I am designing and building a machine learning model using Deep Density Destructors to build a generative model for the purpose of anomaly detection in data with the constraint that both the test and training data might be high dimensional and containing missing values. The model is being developed with the goal of being a modular learning scheme which can be implemented and tested on edge devices in a network.

May 2018 – May. 2019

Lead Undergraduate Researcher for Prosthetic Haptic Interfaces Project

Advisor: Dr. Hong Tan

West Lafayette, Indiana

Here I began an international collaborative research project with Centro di Ricerca "E. Piaggio" Lab from University of Pisa, Italy for testing the effects of encoding the state of a prosthetic hand by softly stretching the skin of a user's upper arm to simulate proprioceptive feedback of a biological hand. In addition to leading the group, I developed the GUI for automatic data collection and parsing with the human subjects, as well as, assisting in the design and manufacturing of the wearable motorized device.

WORK EXPERIENCE

Jan. 2019 – Aug. 2019

Software and Embedded Electrical Engineer

Indiana Microelectronics, West Lafayette, Indiana

In this role, I developed a genetic algorithm to automate and optimize the design of transmission zero filters using parallelizable simulations for a phased-array system for a project with Lockheed Martin. I also designed a system to test and collect temperature drift data for a closed-loop piezo-electric motor.

Aug. 2019 – Dec. 2019

Graduate Teaching Assistant for ECE Senior Design

Purdue University, West Lafayette, Indiana

As a GTA, I directed a lab of 16 students through the process of bringing a hardware/software project from idea to a product. During this process, I acted as both a Senior Engineer and Manager to four different projects simultaneously. In addition to my usual lecturing/grading duties, I also held an external workshop for Python, PCB design in Altium, and device/system testing.

May. 2017 – Aug. 2017

Embedded Electrical R&D Testing Engineer

Stryker Corp., Fort Lauderdale, Florida

In this position, I created a script for measuring and visualizing live power consumption for various loads on an arm-assisted surgical robot using MATLAB. I also designed and laid out a PCB for high frequency and large duration measurements to be used in the load measuring process with using a NI-DAQ as an intermediary.

SKILLS

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| Programming Languages and Frameworks | Python, MATLAB, C, LaTeX, Bash, Batch, VBA, Git, GitHub, Docker, SCPI, Octave, Numpy, Pandas, Scikit Learn, Scipy, OpenCV, Excel, Pytorch, Linux, Jupyter, Anaconda, STM32, Altium, EagleCAD, OrCAD, AutoDesk Fusion360, CATIA |
| More Skills | Leading and working within teams, strong mathematics background, data analysis, all Microsoft Office, product research and design |

LEADERSHIP AND ACTIVITIES

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| <i>2015 – Present</i> | Study Abroad in London, England with CAPA Global Health Network (2018), Executive Board of Alpha Tau Omega Leadership Development Fraternity (2017), Volunteer at Natalie's Second Chance Dog Shelter (Present), Eagle Scout and Avid Backpacker (Present) |
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REFERENCES

To hear more about my experience and skills, please contact me or one of my references below.

David Inouye, Ph.D.

- *Destructive Density Learners Project Co-Advisor (Current Research Advisor)*
- *Assistant Professor in School of Electrical and Computer Engineering*
- *dinouye@purdue.edu*

Saurabh Bagchi, Ph.D.

- *Destructive Density Learners Project Co-Advisor (Current Research Advisor)*
- *Professor in School of Electrical and Computer Engineering and in Computer Science (by courtesy) at Purdue University and Assistant Director of CERIAS security center*
- *sbagchi@purdue.edu*

Hong Tan, Ph.D.

- *Prosthetic Haptic Interfaces Project Advisor (Undergraduate Research Advisor)*
- *Professor in School of Electrical and Computer Engineering at Purdue University and Mechanical Engineering (by courtesy) and head of HIRL lab*
- *hongtan@purdue.edu*

Steve Cuppy, M.S.

- *Project Manager for Lockheed Martin Project*
- *Business Development, Indiana Micro*
- *cuppys@indianamicro.com*