

Katherine Kemp

Silver Spring, Maryland, USA | +1 (240) 438 0186 | k@therinekemp.com

EDUCATION

UNIVERSITY OF MARYLAND

BS IN COMPUTER SCIENCE

May 2022 | College Park, MD

BS IN MECHANICAL ENGINEERING

May 2022 | College Park, MD

Minor in Innovation and Entrepreneurship

Gemstone Honors College

Banneker/Key Scholar

Dean's List

GPA: 3.95 / 4.0

UNIVERSIDAD CARLOS III

Jan - Jun 2020 | Leganés, Spain

LINKS

Personal:// katherinekemp.com

LinkedIn:// katherineekemp

GitHub:// katherinekemp

SKILLS

LANGUAGES

Python • Java • MATLAB • C • \LaTeX

Racket • OCaml • x86 • HTML/CSS

Swift • Arduino • Processing 3

TOOLS

Docker • Git • Firebase • Emacs

Scikit-Learn • OpenCV • Jupyter

LEADERSHIP

Omicron Delta Kappa, *Member*

Tau Beta Pi Engineering Honor Society,

Initiation Chair

Celtic Grace Irish Dance Troupe, *President*

Kappa Theta Pi Professional Fraternity,

Director of Standards

Smith Minors, *Ambassador*

Electronics and Instrumentation, *Teaching Fellow*

Pi Tau Sigma Mechanical Engineering

Honor Society, *Member*

Entrepreneurship, *Teaching Assistant*

FLEXUS: Women in Engineering Living and Learning Program, *Member*

COURSEWORK

Object-Oriented Programming

Data Structures • Algorithms

Discrete Structures and Mathematics

Compilers • Data Science

Mechatronics • Remote Sensing

PROJECTS

SEMI-AUTOMATED HYDROPONICS SYSTEM FOR BEGINNERS

Feb 2022 – May 2022 | College Park, MD

- Used Raspberry Pi GPIO to measure water conductivity with a voltmeter and water height with an ultrasonic sensor
- Maintained water flow and nutrient concentration with submersible pumps and a feedback loop, and controlled grow lights with a relay module
- Stored and processed data using SQLite, PIL, and Matplotlib
- Displayed data on a live updating GUI using Tkinter and alerted users to plant conditions with text updates through Twilio

PREDICTING STOCK PRICES WITH REDDIT COMMENTS

Nov 2021 – Dec 2021 | College Park, MD

- Scraped data from Reddit using Pushshift API and Yahoo Finance
- Generated linear regression models and visualizations for stock price vs. company mentions on r/wallstreetbets using Pandas, Matplotlib, and SciPy

TEAM FORMULA

Aug 2017 – May 2021 | College Park, MD

- Awarded Outstanding Gemstone Team Presentation
- Collaborated with a team of 12 to design, implement, and document research in dynamic wireless power transfer
- Manipulated existing MATLAB tools including the Parallel Computing Toolbox and Biot Savart Magnetic Toolbox to simulate an AC magnetic field via motion through a non-uniform DC field
- Employed Amazon Elastic Compute Cloud servers to model and analyze thousands of system configurations and determine which is optimal
- Designed a test rig to determine the correlation between MATLAB simulations and a physical implementation of dynamic wireless power transfer

WORK EXPERIENCE

MPR ASSOCIATES | CO-OP ENGINEER

Aug 2020 - Jan 2021 | Alexandria, VA

- Automated data analysis of simulated nuclear accident scenarios using Python
- Implemented custom setting selection on Python GUI using Tkinter widget
- Automated verification and validation procedures for thermal hydraulics code with end to end tests using Pytest
- Ported thermal hydraulics modeling application from Python 2.7 to Python 3
- Conducted rigorous search of industry data to determine failure rate of industrial equipment for a reliability analysis of submarine testing processes
- Designed and 3D printed SolidWorks parts for testing before manufacturing
- Checked technical drawings, tolerance analyses, and calculations for validity in compliance with formal QA requirements

INTEGRAL GROUP | MECHANICAL ENGINEERING INTERN

Jun 2019 – Aug 2019 | Washington, DC

- Modeled building conditions using TRACE 700 to calculate HVAC loads
- Designed ductwork and riser diagrams in Revit
- Utilized a ductulator to determine proper duct sizes
- Prepared and maintained equipment schedules in Revit with relevant data and product specifications
- Reviewed submittals and documented inconsistencies