# Katherine Kemp

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## 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: 3.96 / 4.0

### UNIVERSIDAD CARLOS III

Jan - Jun 2020 | Leganés, Spain

## LINKS

Personal:// **katherinekemp.com**
LinkedIn:// **katherineekemp**
GitHub:// **katherinekemp**

## SKILLS

### LANGUAGES

Python • Java • MATLAB • C/C++ LaTeX• OCaml • PLC Ladder Diagram and Sequential Flow Chart

### TOOLS

Excel • Git • OpenCV • Scikit-Learn

## INVOLVEMENT

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

Algorithms
Mechatronics
Object-Oriented Programming
Data Science
Discrete Structures and Mathematics
Remote Sensing

## PROJECTS

### 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

### MOTORIZED BRIO MAZE LABYRINTH GAME

Nov 2019 – Dec 2019 | College Park, MD

- Installed hobby linkages, high-torque servo motors, an Arduino Uno, and an ADXL345 accelerometer on an existing BRIO board game to allow the game to be played via a wired handheld controller
- Implemented a live 3D rendering of the game board orientation using Processing 3 software

## 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 Toplevel 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

- Calculated HVAC loads using TRACE 700 software to model building conditions
- 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