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• Racket • OCaml • Swift

TOOLS

Docker • Git • OpenCV • Scikit-Learn

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
Handheld Programming (iOS)
Mechatronics • 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