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: 3.95 / 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

WORK EXPERIENCE

AMAZON | Software Development Engineer

Oct 2022 - Present | San Diego, CA

- Work on a team to maintain software packages which prevent buyer abuse

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

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

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