

# 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 Citation

Banneker/Key Scholar

Dean's List

GPA: 3.95 / 4.0

### UNIVERSIDAD CARLOS III

Jan - Jun 2020 | Leganés, Spain

## LINKS

Personal:// [katherinekemp.com](http://katherinekemp.com)

LinkedIn:// [katherineekemp](https://www.linkedin.com/in/katherineekemp)

GitHub:// [katherinekemp](https://github.com/katherinekemp)

## SKILLS

### LANGUAGES

Python • Java • MATLAB • C

⌘T<sub>E</sub>X • Racket • OCaml • x86

Arduino • Processing 3

### TOOLS

Git • Emacs • AWS

SQLite • Docker

## 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

- Deploy and test the worldwide expansion of infrastructure for pre-order fulfillment abuse prevention measures in **AWS** projected to save \$80M annually
- Modify an existing system design to support multiple languages and conform to GDPR laws for European marketplace launches
- Write a custom **JSON** deserializer to flatten complex **Java** objects into a storable format for use in ML models
- Diagnose and respond to problems with order processing during Prime Day
- Lead an investigation of a high severity issue impacting 11,000 customers during Prime Day in order to avoid further customer impact during peak traffic
- Write unit tests and run manual integration tests in order to ensure proper behavior of new abuse prevention measures on Amazon.com
- Update dashboards and documentation to monitor and maintain service health
- Cue series of **AWS Lambda** functions to process messages from **SNS** topics
- Implement custom cache metrics in **CloudWatch** for **AWS Lambda**

### STOCK AND FUND SCREENER | FREELANCE SOFTWARE DEVELOPER

Jan 2023 - Present | Washington, DC

- Develop a **Python** GUI to trade stocks based on desired metrics using **Yfinance**, **Pandas**, **Tkinter**, **Matplotlib**, and other tools
- Collaborate with clients to design a custom system with their desired features
- Perform quality assurance testing on calculations for technical indicators

### 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 a **Python** GUI using **Tkinter** widget
- Automated verification and validation procedures for thermal hydraulics code with end-to-end tests using **Pytest**

## 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
- 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

- Led a team of 12 to design, implement, and document research in dynamic wireless power transfer for electric vehicles
- Wrote a **MATLAB** model to simulate an AC magnetic field via movement through a non-uniform DC field and calculate battery charge levels