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**
LinkedIn:// **katherineekemp**
GitHub:// **katherinekemp**

SKILLS

LANGUAGES
Python • Java • MATLAB • C
LaTeX • 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
- Write an **integration test** framework for an asynchronous event processor
- 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
- Implement custom cache metrics in **CloudWatch** for **AWS Lambda**

STOCK AND FUND SCREENER | Freelance Software Developer
Jan 2023 - Aug 2023 | 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