Megan Campbell

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Education

- Massachusetts Institute of Technology - *Electrical Engineering and Computer Science - Freshman*
- Kirkwood High School, Kirkwood (GPA: 4.0 UW, 4.2 W)
    - President/Founder of Physics Astronomy and Chemistry Club, President of Coding Club, President of Equations Club, 13 AP Classes, 2 Dual Enrollment at Washington University in St. Louis

Work Experience

- Nuclear Physics Internship with Physicists Inspiring the Next Generation (2024-PRESENT)
    - Machine learning analysis of rare isotope data
    - Use of the ROOT framework
    - Presented at National Society of Black Physicists Conference 2024
- Coding Coach at West County Coder School (2023-2025)
    - Volunteered 150 hours during summer camps
    - Was offered a job to work with 7-12 year olds, teaching Python, Scratch, C# and Unity.
    - Put on girl scout events to help 11-13 year olds earn their computer science badge
- Cashier at Great Harvest Bakery (2021-2023)
    - Made and prepared bread, pastries, drinks, and sandwiches
    - Gained experience with customer service
    - Trained coworkers

Awards

- First Place Winner of the Congressional App Challenge (2020)
- Second Place Winner of the Congressional App Challenge (2019)
- Silver Medal International Astronomy and Astrophysics Competition (2023)
- National German Exam Gold (2024)
- NGE Study Abroad Award (2024)
- Bausch and Lomb Award (2024)
- We the People Best Video Entry (2024)
- National Merit Commended (2024)
- Outstanding Senior Engineering (2025)
- Outstanding Senior Mathematics (2025)
- Outstanding Senior Science (2025)
- Franklin McCallie Award (2025)

Language

- Swedish: B1-C2 fluency
- German: B2 fluency

Projects

- Reduced Basis Method with Collocation Applied to Nuclear Systems
    - Using a collocation version of the reduced basis method to speed up computational analysis of partial differential equations.
- Isotope Identification on Scintillator Data
    - Application of the ROOT framework on isotope data to extract radii and mass information and therefore determine the identity of different isotopes.

- Website Vulnerability Scanner
    - Python based code that checks websites for XSS scripting, SQL deficiencies, and interacts with MetaSploit. Automates payload injection and analyzes HTTP responses.
- -Stock Market Prediction
    - Using trending tweets to predict stock fluctuations using NLP and sentiment analysis and historical stock market data collected from APIs. Uses LSTM neural networks to predict stock market variation and compares to actual data.
- Voice Powered Virtual Assistant
    - Developed a voice powered virtual assistant capable of responding to spoken commands, including getting weather and news data, reading E-Mails, launching applications, and other specific tasks to my device. I used Python and SpeechRecognition as well as Pyttsx3 and various APIs.
- DeskPod
    - Physical pomodoro timer with Arduino Nano, servo motor, and OLED screen. The 3D printed design makes a full rotation upon completion of each phase.
- Digital NameTag
    - LED Matrix powered by an Arduino Nano to represent my name in a scrolling format with a QR code connected to my LinkedIn.
- HackPad
    - ESP32 powered PCB with a keypad and QMK firmware. Each button on the keypad corresponds to various computer shortcuts when connected to a computer.
- Door Timer
    - Arduino Nano powered device that uses an accelerometer to determine when a door has been opened or closed and automatically sets a timer. Used to control the length of time somebody spends in a certain room.
- AirportTracker
    - Full stack development airport reviewing and tracking website built with Node.js, vanilla JavaScript, JSON, HTML, and CSS with a custom API.