Kiera McCormick — CV

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EDUCATION

Loyola University Maryland   **Baltimore, MD**

Bachelor of Science in Engineering   Expected Graduation: May 2025

- **Concentrations:** Electrical and Computer Engineering

- **Minor:** Mathematics

- **GPA:** 3.740

- **Dean's List Honors:** Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024

- **Relevant Coursework:** Physics I & II, Linear Circuit Analysis, Statics, Calculus I, II, III, Electronics, Digital Logic, Quantum Computing, Signals and Systems, Ordinary Differential Equations, Python Programming, Object-Oriented Engineering Design, Probability and Statistics, FPGA Design, Electrical Communications, Linear Algebra, Electromagnetics, Intro to Microprocessor-Based Systems

Danish Institute for Study Abroad   **Copenhagen, DK**

Core Course: Holocaust and Genocide   *Spring 2024*

PROJECTS

Quantum Computer Simulator   **Spring 2022**

- Engineered a Quantum Computer simulator in Python, leveraging object-oriented programming principles in a semester-long collaborative project.

Solar Panel Mars Rover   **Fall 2023**

- Collaborated in a four-person team to design and construct an autonomous Mars Rover prototype with innovative solar recharging capabilities.

- Spearheaded the development of the rover's motion control system using Arduino programming, optimizing mobility and navigation.

- Engineered a power conversion system to efficiently utilize solar energy for autonomous recharging.
- Implemented an advanced sun-tracking algorithm for the solar panel, maximizing energy collection in variable conditions.

Hotspot Homing Robot (In Progress)   **Fall 2024 - Present**

- Developing a mobile robot designed to detect and localize rogue access points in office environments.

- Integrating cutting-edge wireless signal processing techniques with autonomous navigation systems to create a comprehensive security solution.

- Collaborating with cross-functional teams to design a user-friendly interface for real-time threat visualization and reporting.

RESEARCH AND WORK EXPERIENCE

Space Telescope Science Institute and Johns Hopkins University   **Baltimore, MD**
Summer Astronomy Space Program and the Annual Jelinek Memorial Summer Workshop
May 2024 – August 2024
- Examined the application of Artificial Intelligence, particularly Large Language Models (LLMs), in astronomy research. Assessed the potential of LLMs to enhance research efficiency and reliability.
- Designed and implemented LLM-powered chatbots for deployment on Slack, specializing in prompt engineering and conducting comparisons between open-source and closed-source models.

Omega Technical Services at Los Alamos National Laboratory   **Los Alamos, NM**
Engineering Intern
May 2023 – August 2023
- Collaborated with the industrial engineering team at the Los Alamos National Lab, focusing on task scheduling optimization through databases and automation, along with interpreting and drawing insights from given data.

- Utilized database coding and conducted data analysis using tools such as MicroStrategy, Excel, SQL, Python, and Confluence, contributing to the creation of metrics and dashboards for effective data visualization.

- Worked towards automating an ETL (extract, transform, load) pipeline through MariaDB, MS Task Scheduler, and Alteryx.

Loyola University Maryland   **Baltimore, MD**
Physics Teaching Assistant and Tutor
September 2022 – Present
- Direct students in weekly Physics problems that align with their ongoing coursework.

- Work for two hours weekly in the Physics lab for students seeking help with specific topics.

University of Delaware   **Wilmington, DE**
Junior Physics Intern
March 2020 – August 2020

- Contributed to an astrophysical research project analyzing the spectral characteristics and luminosity of massive stars. Developed Python scripts using Jupyter Notebook to process and visualize complex stellar data.

- Created data visualizations of spectral lines and magnitude measurements, enhancing the interpretation of stellar properties.

PUBLICATIONS

Note: * denotes first authorship.

- *[Designing an Evaluation Framework for Large Language Models in Astronomy Research](#)*

    o Wu, J. F., Hyk, A., **McCormick, K.,** Ye, C., et al., 2024, *ICML: AI4Science workshop*, submitted, arXiv:2405.20389.

- *Real-World Evaluations of LLMs for Astronomy Research*

    o Hyk, A., **McCormick, K.,** Wu, J. F., 2024, *NeurIPS: EvalEval workshop,* submitted.

- *[pathfinder: A Semantic Framework for Literature Review and Knowledge Discovery in Astronomy](#)*
    o Iyer, K. G., Yunus, M., O'Neill, C., Ye, C., Hyk, A., **McCormick, K.,** et al., 2024, arXiv:2408.01556.

CONFERENCES

Note: * denotes an upcoming conference.

Machine Learning conference/workshop paper reviewer for *NeurIPS*

Gender Minorities and Women in Physics Summit   **Johns Hopkins University**

Poster Presentation   September 14, 2024

- Discussed work on the application of Large Language Models in Physics and Astronomy.

*American Astronomical Society 245   **National Harbor, MD**

Poster Presentation   January 12-16, 2025

TECHNICAL SKILLS

Python, Anaconda, Microsoft (Word, PowerPoint, Excel, Teams), Matlab and Simulink, MicroStrategy, CAD, SolidWorks, Slack, Confluence, SQL, LT Spice, Active HDL

EXTRACURRICULAR ACTIVITES

Engineering Industrial Advisory Board   **Baltimore, MD**
Class of 2025 Representative   December 2023 – Present
Society of Women Engineers   **Baltimore, MD**
President   February 2023 – Present
Loyola University Maryland Honors Program   **Baltimore, MD**
Member and Peer Mentor   September 2021 – Present
Haig Scholar   **Baltimore, MD**
Member   February 2024 – Present
Loyola Women's Club Lacrosse Team   **Baltimore, MD**
Member   September 2022 – Present