Jacob Wheelock

Undergraduate Student - Research Assistant - Assistant Instructor

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Current BSEE student with significant laboratory experience in the fields of computer science and electronics engineering. Strong technical communication skills developed by conference presentation and paper publication.

Education

Washington University in St. Louis

August 2019 – May 2023 St. Louis, MO

- Bachelor of Science in Electrical Engineering
- Minors in Computer Science & Robotics
- Grade-Point Average: 4.00 (on a scale of 4.00)

Research Experience

Brain Dynamics and Control Research Group

January 2022 – Ongoing St. Louis , MO

- Employing reinforcement learning concepts to create a feedback system for closed-loop neural control.
- Developed a real-time transcranial current stimulation platform for use as an actuator in a closed-loop neural control system.

Stream-Based Supercomputing Lab

January 2021 – April 2022 St. Louis , MO

- Parallelized the Compton-Scattering reconstruction algorithm using GPU programming techniques to achieve a 300% speed-up for a space-telescope application.
- Developed novel methods to quickly and accurately cluster and identify photons in gamma-ray burst events.

Employment

Assistant Instructor

January 2022 – Ongoing St. Louis , MO

- Creating and delivering practice problem lectures for ESE 351 - Signals and Systems, ESE 330 - Engineering Electromagnetic Principles and ESE 326 - Probability and Statistics.
- Utilizing and developing strong technical communication skills to explain and solve difficult problems for students.

Teaching Assistant

August 2019 – December 2021 St. Louis, MO

- Delivered office hours for CSE 131 - Introduction to Computer Science, CSE 260M - Introduction to Digital Logic, and CSE 362 - Computer Architecture.
- Developed strong interpersonal skills in creating a rapport with students as well as technical communication skills in helping them understand difficult concepts.

Publications

Supporting Multi-messenger Astrophysics with Fast Gamma-ray Burst Localization
https://ieeexplore.ieee.org/document/9651308

Conferences

Supercomputing 2021
https://sc21.supercomputing.org/program/workshops/

Honors/Awards

Russell R. Pfeiffer Outstanding Junior Award

March 2022
Washington University in St. Louis

Rick Grodsky ESE Award for Technical Achievement

March 2022
Washington University in St. Louis

Antoinette Frances Dames Award

May 2021
Washington University in St. Louis

Norvell C. Brasch Memorial Scholarship

August 2020 - Ongoing
Washington University in St. Louis

Languages

- CUDA
- MATLAB
- C++
- C
- Java
- Python