

Jacob Sindorf

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jsindorf.github.io

Education

Arizona State University, Tempe, AZ
PhD, Systems Engineering, May 2023
Masters in Passing, August 2021
GPA- 4.0

The University of Arizona, Tucson, AZ
Bachelor of Biomedical Engineering, May 2020
Minor of Mechanical Engineering
GPA- 3.917

Technical Skills

Programming: Python/Jupyter, MATLAB, Arduino (C/C++), TensorFlow

Software: Solidworks, Simulink, GitHub, Virtual Machine

Projects

Graduate Researcher | Arizona State University

August 2020 – Present

- Studied wearable sensors and the applications of machine learning
- Researched PPG sensor signals and the underlying mathematics behind the signal's dynamics

Embedded Deep Learning Heart Rate Estimation Device | Course project

January 2022 – May 2022

- Developed an embedded wrist-worn heart rate sensor with PPG and Arduino
- Deployed a trained deep neural network through TensorFlow lite to Arduino
- Generated python and Arduino/C++ scripts for training and preprocessing

Reinforcement Learning in UR5 Task Training | Course project

August 2021 – December 2021

- Programmed two reinforcement learning algorithms on a UR5 for reaching tasks
- Organized software dependencies to allow for seamless use and deployment to the hardware
- Debugged python scripts and UR5 software to allow for real time reaching task training

PBVI for Motion Artifact and Sensor System Energy Savings | Course project

August 2021 – December 2021

- Compiled a POMDP based PBVI algorithm through MATLAB to maximize rewards
- Derived extensive mathematical formulations that was used to run simulations in MATLAB
- Found maximum rewards with high accuracy and low energy cost in a multi-wearable sensor system

Undergraduate Researcher | University of Arizona

October 2018 – May 2020

- Multi-subject statistical analysis of processed MRI data in MATLAB and JMP
- Statistical testing to identify significant brain region trends between healthy adults, MCI, and young adults
- Contributor on published paper, <https://doi.org/10.1111/jon.12845>, Journal of Neuroimaging

Work Experience

ASU Teaching Assistant

August 2020 – May 2022

- EGR280, *Eng Statistics*: Assisted students in office hours, hosted and recorded supplemental instruction sessions
- EGR201, *Use Inspired Design*: Drafted course material including lectures and homework and assisted in 3D printing training and use
- EGR202, *Use Inspired Design II*: Assisted in course development, assignment creation, office hours and grading

BIO5 Public Affairs Assistant- University of Arizona

September 2017- May 2020

- Managed and co-created professional development focused BIO5 Ambassador Internship for UA students
- Lead tours and gave presentations on BIO5 research/building to Professional and Student crowds
- Moderated professional science discussion panels



For more details and projects visit jsindorf.github.io or scan