SUSANNA WEBER

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EDUCATION

Columbia University *Expected December 2024*
Master of Science, Biomedical Engineering
University of California, Berkeley *May 2023*
Bachelor of Arts, Physics | Minor, Electrical Engineering and Computer Science (EECS)

Awards: Berkeley Physics-and-Astronomy Undergraduate Research Scholar (*Spring + Fall 2021, Fall 2022)*

Relevant Coursework: Principles of MRI, Deep Learning in Biomedical Imaging, Deep Learning for Signal Processing, Biostatistics, Data Structures, Thermodynamics, Quantum Mechanics, Linear Algebra, Calculus

RELEVANT SKILLS

Languages: Python, MATLAB, Java, C++
Libraries: PyTorch, TensorFlow, NiBabel, Pydicom, OpenCV, Pandas
Other skills: KiCad, Arduino, AutoCAD, Git, LaTeX

RESEARCH EXPERIENCE

MR SCIENCE Lab at Columbia University
Graduate Student Researcher *August 2023 - Present*

- Thesis project (in progress): Implementing **multi-coil shimming** for **cardiac MRI**
- Simulated three-dimensional B0 distributions over *in vivo* heart and multi-coil shimming in **MATLAB**

General Electric Healthcare
Medical Imaging AI Intern *May 2022 – August 2022*

- Built generative adversarial networks for paired and unpaired **MR to CT** scan translation in **TensorFlow**
- Used vision transformer-based architectures to classify anatomical structures in MR scans

Hellman Lab at UC Berkeley
Undergraduate Student Researcher *January 2021 – December 2022*

- Fabricated amorphous multi-layer, ultra-thin films with magnetron sputtering
- Measured resistivity as a function of temperature using closed-cycle refrigeration system
- Built **Python** interface to control closed-cycle system, cooling samples to 3K

Garcia Lab at UC Berkeley
Undergraduate Student Researcher *July 2020 – January 2021*

- Simulated live imaging of gene transcription rates in fruit fly development using **MATLAB**
- Used simulation to quantify number of active, transcribing cells in fruit fly embryos
- Presented results to 200+ faculty and students at the Berkeley Physics Undergraduate Poster Session

HIGHLIGHTED PROJECTS

Cardiac MRI Segmentation
Columbia University - Deep Learning for Biomedical Imaging *March 2024 – May 2024*

- Developed **deep learning** architectures to segment right ventricle of the heart in cardiac cine scans
- Tested U-Net and attention-based approaches in **Pytorch**
- Worked with NIFTI and DICOM image formats using **NiBabel, PyDicom,** and **OpenCV**

Liquid Engine Rocket Flight Computer
Space Technologies and Rocketry at Berkeley *August 2021 – May 2023*

- Designed, built, and tested PCBs used during engine tests and launch of liquid engine rocket in **KiCad**
- Wrote live telemetry and data analysis software using **Arduino/C++**

Automated Photometry Measurements with MAGIC Atmospheric Minion (MAM)
Max Planck Institute for Physics *May 2021 – July 2021*

- Automated photometric filter system used by the MAGIC Telescope in **Python**
- Implemented algorithm to automatically reduce noise in CMOS images acquired by MAM