



Education

Rochester Institute of Technology, Rochester, New York

B.S. in **Experimental Astrophysics** – School of Individualized Study (expected Dec 2020)

Experience

Research Engineer – Active Perception Lab, University of Rochester

Jan 2019 – Dec 2019

Full-time work alongside school
Developed eye-tracking instrumentation for high resolution visual science experiments
Developed software & hardware for scientists to run/operate Instruments
Left job on good terms so I could return to school full-time

Lead Developer – ImagePypelines open source scientific library (www.imagepypelines.org)

Since May 2018

Python graphing library intended to make it easy for scientists to develop and scale up algorithms
Special focus on applications in Astronomy & Imaging Science

Imaging Systems Intern & Part Time Employee – Fluxdata Inc. (www.fluxdata.com)

Jan-Aug 2018

Spearheaded Development of Machine Learning and Feature Engineering Framework, directed graduate students
Hired as part time after internship ended to further develop software

Asteroid Miner | Instrumentation Intern – Planetary Resources Inc. (planetaryresources.com)

June 2017 – Jan 2018

On team designing instrumentation for use in asteroid exploration & resource detection
Optical cleanroom experiments evaluating instrument designs
Spearheaded development of planetary observation simulation software for algorithm & CONOPS development

Research Assistant – Instrumentation for experimental cosmology (jeffmagg.io/CIBER2.html)

Jan. 2017-June 2017

Star tracker for sounding rocket attitude determination (see jeffmagg.io/cstars.html)
Designing focal plane hardware to interface with CMOS sensor for use in liquid nitrogen cryostat
Wrote custom telemetry decoding and downlink software in C

Control and Operations Lead – Custom scanning robot for SpaceX (hyperloop.rit.edu)

Jan. 2016-Jan. 2017

Team contacted directly by SpaceX to build inspection robot for first functional Hyperloop test track
Designed and built data acquisition system, with integrated self-monitoring and fault case recovery
Designed and built automated imaging-based gap/crack measurement system for use in structural inspection
Robot was field-tested at SpaceX headquarters Nov 4-7, 2016

Engineering Lead – SpaceX Hyperloop Design Competition Team (hyperloop.rit.edu)

Aug. 2015-Aug. 2016

Designed non-linear optical communication system concept for Elon Musk's Hyperloop concept
Winner of Special Innovation Award at the international SpaceX Hyperloop Pod Competition

Skills

Hardware: Machining (*mills, waterjets, etc*) | Scientific Cameras (*integrating into an instrument*) | 3D printers
Simple Circuit Board Design (*Eagle*) | Data Acquisition Systems | Oscilloscopes, Function Generators, etc

Programming : Python | C++ | C | MATLAB | Javascript → jeffmagg.io/github.html

Other: UNIX & Linux | Computer Vision | Fourier mathematics | OpenGL | Cleanroom Optics Training
Machine Learning | Radiometry | Git/Version Control | LaTeX | Cross Discipline Experience

Personal Interests

Exoplanetary & Planetary Science | Instrumentation