Jeffrey Maggio
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Education

Rochester Institute of Technology, Rochester, New York

Bachelor of Science, expected Dec 2018:

Major: Imaging Science | Minor: Astronomy

Image Processing and Computer Vision | Computing and Control | Linear and Fourier methods of Imaging
University Astronomy | Interactions Between Light and Matter | Stellar Astrophysics | Modern Physics
Geometric Optics | Physical Optics | Optical System Design | Radiometry

Experience

Instrumentation Systems Intern | Asteroid Miner – Planetary Resources Inc. (planetaryresources.com) *Since June 2017*

- On team designing instrumentation for use in asteroid exploration & resource detection
- 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

Cubesat Initiative – RIT Space Exploration *Perpetual*

- Adviser for high altitude balloon based vegetation mapper using computer vision

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*

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

Research Assistant – Particle Image Velocimetry (under Dr. Liran Oren at the University of Cincinnati) *Summer 2015*

- Coded and automated data acquisition in LabVIEW
- Designed and machined custom equipment fixtures

Freshman Imaging Project *Spring 2015*

- Comprehensive student led course that had the goal of designing a transient imaging system from scratch
- First team to create a simulation in virtual environment of Transient Imaging

Skills

Hardware: Data Acquisition Systems | Circuit Board Design and Fabrication | Programmable Cameras | Embedded Linux Systems | Optical Assembly | 3D printers | Basic Machining (*mills, lathes*)

Software: Version control systems *(Git)* | CAD design software *(Inventor, Solidworks)* | Scientific Documentation Software *(LaTeX)* | Optical Design Software *(Zemax)* | Graphics (OpenGL)

Programming: Python, C, C++, Bash, Matlab, Javascript, LabVIEW → jeffmagg.io/github.html

Other: UNIX & Linux | Computer Vision | Fourier mathematics | OpenGL | Cleanroom Optics Training

Personal Interests

Exoplanetary & Planetary Science
Machine Learning
Astronomical Instrumentation