Jeffrey Maggio
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personal website

Education

Rochester Institute of Technology, Rochester, New York
B.S. in **Experimental Astrophysics –** School of Individualized Study (Dec 2020)
Minor in **Communication**

Personal Interests: Exoplanets, Planetary Science, Instrumentation, Pipeline Development

Experience

Junior Scientist Intern – SkuTek Instrumentation (https://www.skutek.com) *Feb 2021 - present*
- Developing instrument control systems under DOE grant. Will be used at Argonne National Lab.
- Writing firmware to modify RISC5 cpu softcore so instrument hardware can be controlled directly in software
- Developing user manual focused at early-career engineers and students

Capstone – Transiting Exoplanet Detection using a Custom Scientific Toolkit *Aug 2020 - Jan 2021*
- Automatic exoplanet candidate detection pipeline for small telescopes
- Using my open-source pipeline library: ImagePypelines (see below)

Research Engineer – Active Perception Lab, University of Rochester (aplab.bcs.rochester.edu) *Jan 2019 - Dec 2019*
- Developed instrumentation for high resolution visual science experiments
- Developed software & hardware for scientists to run/operate Instruments

Lead Developer - ImagePypelines: Open Source Scientific Library (www.imagepypelines.org) *May 2018 - present*
- Self-developed python library to address problems in scientific software development
- Intended to turn rough science scripts into robust and scalable scientific pipelines
- Manage a 4 person development team

Imaging Systems Intern & Part Time Employee – Fluxdata Inc. (www.fluxdata.com) *Jan - Aug 2018*
- Directed graduate students to develop machine learning framework
- Hired as part time after internship ended to further develop software

Asteroid Miner | Instrumentation Intern – Planetary Resources Inc. (planetaryresources.com) *June 2017 - Jan 2018*
- Worked on instrumentation for use in asteroid exploration
- Optical cleanroom experiments evaluating instrument designs
- Directed development of planetary observation simulation software for algorithm & CONOPS development

Research Assistant – Instrumentation for experimental cosmology *Jan - June 2017*
- Star tracker for the CIBER2 instrument's sounding rocket - used for attitude determination
- Designing focal plane hardware to interface with CMOS sensor for use in cryostat
- Wrote custom telemetry decoding and downlink software in C

Engineering Lead – Custom scanning robot for SpaceX *Jan. 2016 - Jan. 2017*
- Winner of Special Innovation Award at the international SpaceX Hyperloop Pod Competition
- Team contacted directly by SpaceX to build inspection robot
- Personally designed and built data acquisition system & robot control system
- Robot was field-tested at SpaceX headquarters Nov 2016

Skills

Hardware: Machining *(mills, waterjets, etc)* | Scientific Cameras | 3D printers | FPGAs | Arduino, Raspberry Pi, etc
Simple Circuit Board Design *(Eagle)* | Data Acquisition Systems | Oscilloscopes, Function Generators, etc

Programming : Python | C++ | C | MATLAB | VHDL | Javascript → github.com/jmaggio14

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