Jeffrey Maggio
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Education

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

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

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Experience

Capstone – Transiting Exoplanet Detection using a Custom Scientific Toolkit *Aug 2020 – present*
- Automatic exoplanet candidate detection pipeline for small telescopes
- Developing all tools and algorithms myself
- 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**)** *Since May 2018*
- Self-developed python library to address problems in scientific software development
- Intended to turn rough science scripts into robust and scalable scientific pipelines
- Special focus on applications in Astronomy & Imaging Science
- Manage a 4 person development team

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*
- 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 (jeffmagg.io/CIBER2.html) *Jan. 2017-June 2017*
- Star tracker for sounding rocket attitude determination
- Designing focal plane hardware to interface with CMOS sensor for use in 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
- Designed and built imaging-based gap/crack measurement system
- 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 nonlinear optical communication system concept for Elon Musk's Hyperloop concept
- Winner of Special Innovation Award at the international SpaceX Hyperloop Pod Competition

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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