Timothy James Ewing

US Citizen *timjewing@gmail.com*
https://tim.fish *720-442-2928*

EDUCATION

University of Colorado Boulder **2016 - 2021**
Bachelor of Science - Engineering Physics

TECHNICAL SKILLS

Skill	Active Use	Years of Experience	Experience Level
Python	2014 - Present	8	Expert
git	2012 - Present	10	High
Unix Shell (BASH)	2012 - Present	10	High
C++	2014 - 2017	4	Moderate
Java	2012 - 2018	7	Moderate
Go	2021 - Present	1	Moderate
MATLAB	2017 - 2021	4	Moderate
Javascript, HTML	2016 - 2021	5	Moderate
Solidworks, Fusion 360	2015 - 2020	5	Moderate

EXPERIENCE

Software Developer, Toro Robotics, Longmont, Colorado **2021- Present**

- Developed complex path planning algorithms for autonomous lawn mowers in Python.
- Designed a novel projection from 3D to 2D for planning paths on variable-height terrain.

Flight Controller, Southwest Research Institute, Boulder, Colorado **2017 - 2021**

- Worked as Flight Controller for CYGNSS, a constellation of eight weather satellites.
- Maintained and developed Python/Django based mission planning tools for two CYGNSS and LUCY, NASA missions.
- Developed algorithms for automated data validation of CYGNSS data in Python.
- Developed a web interface for an in-house orbital trajectory analysis tool (Lambert solver).

Software Team Member, FIRST Robotics Team 1619 **2012 - 2016**

RELEVANT COURSEWORK

Independent Study, New Horizons

- Designed an optical filter conversion algorithm for unresolved Pluto and Charon observations in order to compare results to existing data.
- Implemented least-squares Fourier series fit to analyze Pluto/Charon phase curve.
- Built a modular, testable pipeline in Python.

Independent Study, MAXWELL Cubesat

- Developed calibration methods for a 6-axis gyro/accelerometer and defended conclusions at a Technical Interchange Meeting with NASA personnel.

Additional Relevant Coursework

- **Physics:** Classical Mechanics I-II, Electricity and Magnetism I-II, Quantum Mechanics I-II, Thermodynamics and Statistical Mechanics I
- **Mathematics:** Statistics I, Calculus I-III, Linear Algebra I, Differential Equations I, Differential Geometry