Ethan Voth

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EDUCATION

University of Central Florida, Burnett Honors College — August 2021 – May 2025

Bachelor of Science in Computer Science, 3.97 GPA — *Orlando, Florida*

- Awarded Benacquisto Scholarship as a National Merit Scholar
- Completed coursework in Data Structures and Algorithms, Object Oriented Software Development, Cybersecurity, Discrete Computational Structures, Programming Languages, Statistics, Calculus I-III Mathematics

TECHNICAL SKILLS

Programming Languages: Python, C, C++, Java, JavaScript/TypeScript
Technologies and Frameworks: Git/GitHub, HTML and CSS, React, React Native, Svelte, Flutter (Dart), Hugo SSG

WORK EXPERIENCE

The MITRE Corporation — October 2023 – December 2023

Software Engineering Internship — *Remote*

- Investigating the use of generative AI to accelerate implementation of algorithms from technical manuals
- Augmenting an existing AI code generation framework to add incremental codebase development capabilities

The MITRE Corporation — May 2023 – July 2023

Software Engineering Internship — *Colorado Springs, CO*

- Developed Python prototype of a legacy rate track satellite detection algorithm for ground-based telescopes
- Modified the algorithm to include synthetic rate tracking, which provided a 7% detection accuracy improvement
- Presented prototype and findings to inform government decisions on funding for future software upgrades
- Worked with team to discuss improvements, assist with live telescope collect, and develop analysis methodology

Colorado School of Mines — June 2021 – August 2021

Computer Science Internship — *Remote*

- Learned statistics and optimization concepts necessary for an understanding of machine learning
- Gained insight into the research process by reading and editing technical papers

PERSONAL PROJECTS

Webbster – Astronomical Image Processing Program — August 2022 – November 2022

Python (Astropy, scikit-image) — *GitHub repo*

- Aligns multiple FITS images from the NASA JWST using their built-in WCS headers so that they can be layered
- Stretches the contrast of each layer using adaptive histogram equalization to reveal the detail in the raw data
- Colorizes each monochrome layer based on the properties of its NIRCAM filter and blends them into one image

HouseHold – Cross-Platform Household Management App — February 2023 – April 2023

React Native + Amazon Amplify — *GitHub repo*

- Created as part of an 8-person Agile team, using Jira to coordinate responsibilities, tasking, and sprints
- Authenticates users with AWS Cognito, supporting login and registration with email verification codes
- Utilizes custom GraphQL queries and subscriptions to update data in real-time across users and devices

GoPro Video Sync – Telemetry-Based Video Sync Tool — February 2023 – March 2023

Python (MP4 parsing, scipy) — *GitHub repo*

- Parses the GoPro Metadata Format (GPMF) track of an MP4 file, extracting gyroscope and accelerometer data
- Compares the sensor signals from two jointly-mounted cameras, using cross-correlation to determine the offset between the two videos, which can be used to sync the videos without relying on visual or audio cues