Ethan J. Franco

(631)-639-4472 | ethanjfranco@gmail.com | efranco01.github.io

Summary

B.S Physics graduate seeking to make a positive and noticeable impact through hard work and passion. 3 + years of internship, research and contract positions growing the skills and experience necessary to pursue interdisciplinary roles. Proven ability to work with software and hardware to achieve tangible results.

Education

Stony Brook University — **Stony Brook, NY**

Bachelor of Science in Physics — ***May 2024***

- Relevant Coursework: Computation for Physics, Waves & Optics, Analytical Mechanics, EM Theory, Electronics Lab, Quantum Mechanics, Thermodynamics, Kinetic Theory, Statistical Mechanics, Senior Lab, Object-Oriented Programming

Skills

- Coding Languages: Python, Java, JavaScript, SQL, MATLAB, Fortran, LaTeX, Bash
- Frameworks: Django, Docker, Git, Flask, PyTorch, Qiskit
- Software: LabView, Zemax OpticStudio, JMP, Fusion 360, Solidworks, Snowflake, Azure, LTspice, KiCad, Grafana, HPSS
- Hardware: Oscilloscopes, Signal Generators, CNC, PCB Design, SLA, FDM, PVD
- Operating Systems: Linux (Ubuntu, Fedora), MacOS, Windows

Professional Experience

Brookhaven National Laboratory | *Student Assistant* — ***October 2023 – Present***

- Facilitated the upgrade, testing, and implementation of the Central Reconstruction Service from Python 2 to Python 3.
- Utilized SSH, bash scripting and batch process fundamentals to achieve a successful migration.

SUNY Research Foundation | *Software Developer & Sys Admin* — ***November 2022 – Present***

- Developed automation Python scripts leading to a 30% reduction in manual effort and increased efficiency.
- Maintained and optimized Ubuntu server, utilizing SFTP for file movement and xrdp for remote desktop services.
- Utilized CI/CD principles to improve applications, with feedback from SBU and Wayne State University researchers.

Polen Capital | *Data Applications Engineer Intern* — ***June 2023 – August 2023***

- Constructed Python-Azure data pipelines to automate data reporting, saving 12.65 hours daily.
- Time to completion of monthly and quarterly tasks reduced by 100 hours and 15 hours respectively.
- Developed a scalable Python API on Azure Functions, enabling secure and expandable cloud-based web scraping.

Formlabs | *Optimization Engineer Intern* — ***January 2022 – August 2022***

- Designed and implemented full-stack automation tools using Python and React.js, streamlining materials R&D.
- Modeled forces, stress/strain on print geometries and conducted DOE to reduce support generation time by 40%.
- Optimized industrial photopolymer resins, reducing overall print times by an average of 3 hours with 100% print success.

Wolfspeed, Inc | *Process Engineer Intern* — ***May 2021 – August 2021***

- Analyzed PVD data using Microsoft Access and JMP to perform root cause analysis of AU spitting events.
- Built a real-time predictive model to monitor deposition, reducing OOS batches by 30%.
- Wrote and distributed SOP for usage of the Temescal 4400, providing new and optimized post-processing procedures.

Research Experience

Computational Astrophysics – *Prof. Simon Birrer (Stony Brook University)* — ***September 2023 – December 2023***

- Developed advanced lensing models integrated with “lenstronomy” Python library to predict time-delays of triply imaged type Ia “Supernova H0pe” within the galactic cluster regime.

Molecular Physics – *Prof. Jesus Perez-Rios (Stony Brook University)* — ***January 2023 – May 2023***

- Worked with a team of 6 in developing the Database for Spectroscopic Constants of Diatomic Molecules (DSCDM), leveraging machine learning capabilities to enable predictions for untested molecules.