

Panelist Internship Experiences



Drishikaa Thimmaiah
Astronomy
Paramium Technologies

Paramium Technologies is a startup based in Tucson, developing a Ground Station as a Service program, manufacturing reflectors and developing software for efficient satellite communications. During my internship, I had the opportunity to work on various projects. Key in them were programming features for a robotic arm such as motion restrictions, as well as a safety tower light. These features ensure a safe usage of the robotic arm, avoiding damage to its wiring while in motion. An outreach related project I worked on involved coding a raspberry pi model robot which demonstrated the usage of the robotic arm. A unique project I had the opportunity to work on was utilizing VFX to place a 3D animation of a Parmium's Ground Station model in drone footage of potential locations for the station. This process involved motion tracking, and video processing in a software called Blender. Most importantly, through my experience I developed confidence in tackling projects that I had never done before, and learning throughout the process! Skills gained: basic robotic programming with Rospy, 3D designing, working with point clouds, 3D animation and VFX in Blender.



Isabella Olin
Astronomy, Physics
NOIRLab

My internship at the NSF NOIRLab's Astro Data Lab was focused on developing a Jupyter Notebook for their public example science cases collection. The Notebook I created showcases the power of the Cosmic Slime Value Added Catalog (CS-VAC) and stacking Sloan Digital Sky Survey (SDSS) spectra to research galaxy quenching, the process by which galaxies stop forming stars. By quantifying a galaxy's environment with matter density values from the CS-VAC, we are able to look for spectral tracers of environment-dependent quenching. The Notebook focuses specifically on the region surrounding the Coma Cluster, a rich galaxy cluster with a significant matter density range. Users following the Notebook find that there is environment-dependent quenching, with galaxies being more quenched in high density regions. This Notebook can be found through [this link](#). Through my internship, I learned how to query large datasets (SQL/AQL), strengthened my knowledge of Git and Jupyter Notebook, and gained experience fostering professional connections. I've continued my work with NOIRLab through the academic year via a NASA Space Grant Fellowship.



Pranav Chiploonkar
Astronomy, Physics
Clear Core

During my internship at Clear Core, I implemented OpenAI's GPT-4o large language model (LLM) into a data retrieval program used by banks and other financial institutions. The LLM allowed the user to make requests in natural, everyday language (e.g. "How many credit unions are in 85719 zip code?") and the LLM would query the internal database and provide the requested information. I used Python, Bash, and Node.js over the course of the project.



Shashank Verma
Astronomy, Physics
Fringe Metrology

I'm currently majoring in Astronomy and Physics at the University of Arizona. Last summer, I interned at Fringe Metrology, where I developed a dual-camera metrology system for measuring the flatness of large radio dishes. My work involved optics, instrumentation, and software development. I later continued working with Fringe Metrology beyond the internship, transitioning into semiconductor wafer metrology. During this experience, I expanded my skills in Python, SOLIDWORKS, ZEMAX, and MATLAB, while also connecting with industry leaders in the semiconductor industry. My current research focus is in astronomical instrumentation, where I work with CCD detectors, telescopes, and applied optics.



Suhani Surana
Astronomy, Computer Science
Airth.io

I worked on the machine learning side of things where I developed adaptive/generic ML algorithms to make inferences over any custom datasets at Airth.io, which is a software company dedicated to AI driven solutions to revolutionize the mining industry.. This also included complex visualizations for data containing multiple features. My interactive ML algorithm development study includes algorithms for both supervised and unsupervised data. After having worked on the individual algorithms catering to the mining data, my work included parametrizing all these algorithms for general datasets including pre/post processes.



Taylor Kalish
Physics, Math

The NSF's NOIRLab is the center of ground-based, optical-infrared astronomy in the United States. It supports five main programs, including several international observatories and the Community Science and Data Center (CSDC), where I had my internship. I worked on software development for the CSDC, which primarily consisted of repository management. First I helped the CSDC to migrate their code base from GitHub to GitLab. Then I was tasked with writing continuous integration

(CI) pipelines that automatically test Python code for style and formatting errors before any changes can be saved. The tools and workflows I introduced streamline the development process at the CSDC and ensure higher quality, more consistent code.