

TIMESTEP Research Apprenticeship Program

Preparation for Research Positions and Technical Internships in Physics and Astronomy

TIMESTEP is offering a skills-based apprenticeship to University of Arizona students majoring in astronomy and/or physics. Many research opportunities and internships require prior experience utilizing coding and lab skills. This program will allow you to build technical and professional skills in a research environment, preparing you to be competitive for research positions and programs (ex. NASA Space Grant Fellowship, UROC, REUs, etc.) and/or a position in TIMESTEP's Summer Tech Internship Program with a local employer.

Program details:

- Program runs September 2024 through April 2025
- Applications will be accepted from students who will be in their 2nd year of study (or equivalent) as an astronomy and/or physics major. Applicants must have already completed at least one of CSC 110, PHYS 105, or ECE 175, or an equivalent credit.
- Pay is for 5-10 hours per week @ \$15.50 per hour
- You will attend weekly meetings/workshops with your cohort. Meetings will occur every Friday 1:00 – 2:30 pm.
- You'll join a research group focusing on either: 1. Computing Research in Astrophysics, or 2. Hardware & Software in Astrophysics
- Work will focus on a variety of tasks and projects designed to build technical skills and research preparedness.

Skills and Training:

CORE (completed by all interns)

- Reading scientific papers
- Literature review & NASA Astrophysics Data System
- Linux Command Line
- Python
- Version control- Git, GitHub, Git Client
- Overleaf- LaTeX
- Debugging (reading error messages/Stack overflow)
- Visualizing data (Matplotlib)

ADDITIONAL (project-dependent)

- Networking (SSH)
- Creating block diagrams
- UA High Performance Computing (HPC)
- Computer vision (image processing-eg. OpenCV and some Scikit image processing features)
- Databases, SQL
- Drafting (r/t Solidworks, CAD)
- Basic optics
- Bayesian inference
- Machine learning (e.g. PyTorch)
- Instrumentation/lab skills- soldering, circuitry, signal generator, 3D printing, Raspberry pi & Arduino

Applications open Friday, April 19th and close at midnight Sunday, May 19th

Complete this application in Qualtrics: [TIMESTEP Apprenticeship Program application](#)

In advance:

1. Prepare your resumé to upload with your application. You must follow the [Example Tech Resume](#) format on our website under "Summer Tech Internship". Be sure to include research experiences, significant class projects, technical skills (including programming languages & operating systems), jobs and clubs (including in high school).

2. Get an unofficial transcript from the Office of the Registrar to upload: [Instructions for online access](#)

Reach out to us at timestep@arizona.edu with any questions.



THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE

**Astronomy
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