

TASKEEN JAFRI

 <https://tjafri.com>  tjafri@asu.edu  Tempe, AZ

EXPERIENCE

Neutronics Simulation Intern

Serva Energy

 May 2026 - Present

- Redesigned a **Monte Carlo** neutron transport simulator to process workloads in parallel, memory-bounded batches, enabling previously infeasible ray counts while also improving runtime by up to **40%**.
- **Verified** neutron absorption and scattering models against **ENDF** nuclear data, identifying and correcting anomalies in the transport logic.
- Used open-source **density functional theory (DFT)** software to relax crystal structures and calculate equilibrium properties for multiple compounds.
- Computed **Gibbs free energies** for more than three compounds and verified the results against published calculations and theoretical predictions.

Undergraduate Research Aide

Arizona State University

 June 2025 - Present

- Developed an **automated system** that reconstructs discrete DNA-origami helix structures and infers lattice types from **raw 3D coordinates**.
- Applied **graph-traversal algorithms** and structural principles of DNA origami to automate lattice reconstruction while supporting customizable inputs.
- Preparing the reconstruction tool and supporting methodology for publication.

Mission Materials Archivist

Arizona State University

 May 2024 - Aug 2025

- Supported the archival effort for NASA's Genesis mission, which collected solar-wind particles for laboratory analysis.
- Developed a **Python-based automation** system that streamlined the processing and organization of archival records.
- Collected, organized, and documented mission data for analysis and secure preservation at NASA's Johnson Space Center.

WEBSITES

Website

 <https://tjafri.com/>

LinkedIn

 <https://www.linkedin.com/in/tjafri/>

GitHub

 <https://github.com/TskJafri>

SKILLS

<u>Python</u>	<u>JavaScript</u>	<u>TypeScript</u>	<u>Bash/Zsh</u>
<u>Monte Carlo</u>	<u>Markov Chains</u>	<u>Graph Theory Methods</u>	
<u>Bayesian Inference</u>	<u>Probability and statistics</u>		
<u>PyTorch</u>	<u>TFLite</u>	<u>Tensorflow</u>	
<u>Fusion360</u>	<u>Figma</u>		

EDUCATION

Bachelor of Science (B.S.)

Arizona State University

 Aug 2023 - May 2027 Tempe, AZ

- Bachelor of Science (B.S.), Applied Mathematics
- **Dean's List: Fall 2023, Spring 2024, Fall 2024, Spring 2025, Fall 2025, Spring 2026**
- 4.00 GPA

SELECTED TECHNICAL PROJECTS

Honeywell Hacks: Ignite

 Jan 2025 - Jan 2025

 Presentation

- Won 4th place (\$1000) at the Honeywell & ASU hackathon by redesigning a radiator for the HTF7000 turbofan engine.
- Developed core thermodynamic equations for the redesign as one of two R&D specialists.
- Utilized Python to analyze, optimize, and validate the final design data.

Ion Beam Analysis Lab (IBeAM)

 March 2025 - May 2025

- Gained hands-on experience with ion beam accelerator hardware maintenance, including high-vacuum systems.
- Trained in lab protocols and advanced analysis techniques, including Rutherford Backscattering Spectrometry (RBS).
- Used data analysis software (xRUMP, SIMNRA) to analyze particle scattering data.

BeastWatch

 Feb 2025 - Feb 2025

 BeastWatch Github

- Designed and developed the core AI pipeline for a wildlife safety app in a 4-hour, high-pressure hackathon.
- Built a complete, functional demo, using a Faster R-CNN model to detect animals from a video feed.
- Integrated detection data with Gemini 2.0 to generate instant, real-time safety guidance.

LEADERSHIP EXPERIENCE

Head Event Coordinator

Astronomy Club

 Nov 2024 - May 2026

- Provide leadership for a club of over 300 members, managing monthly stargazing events and ensuring optimal use of Celestron telescopes for celestial observations.
- Hosted events with the help of officers to enhance member engagement through activities like guided sky tours and astronomy-themed professor talks.
- Previously Vice President of the club.

Financial Manager

The AI Society

 Sept 2023 - May 2024

- Created budget requests and managed funding for the student organization with over 250 students.
- Collaborated with a diverse team to organize events and workshops focused on Python models, including topics like Zero-Shot VQA and models utilizing Whisper AI STT & Google TTS.