

# SARAH JIANG

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## EDUCATION

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Georgetown University — B.S. in Physics

August 2017-May 2021

GPA: 3.54

## RESEARCH/WORK EXPERIENCE

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Associate Data Analyst — Technomics, Inc.

January 2023-Present

- Develop and utilize data modeling and machine learning tools to support program planning and operations research for the DOE/NNSA
- Perform data wrangling, analysis, and visualization on various datasets, including creating and managing database interfaces and workflows
- Lead internal Python capability development initiative to increase integration of Python across the company
- Prepare effective data products and reports to communicate progress and insights to stakeholders at all levels of the process

Research Intern — Space Telescope Science Institute

October 2021-October 2022

Research intern working with Dr. Arpita Roy to:

- Develop and use machine learning models to analyze stellar spectra using extreme precision radial velocity (EPRV) measurements to detect exoplanets
- Train models to predict stellar activity signals from spectral features and distinguish between stellar activity and small planetary signals to help improve the sensitivity of the RV method to Earth-sized exoplanets
- Analyze stellar spectra for activity-correlated/sensitive features to identify informative inputs and calibrate predictions for model
- Perform data reduction/processing and analysis on various datasets, including both solar and stellar data from the high-precision spectrographs HARPS-N and NEID
- Attend weekly team meetings and communicate progress/results of research to both internal and external collaborators

Research Assistant — Georgetown University Department of Physics

September 2019-August 2021

Research assistant to Professor Edward van Keuren, working on:

- The development, synthesis, and analysis of polymer nanoparticles for treating acute kidney injury
  - Assembled optical and scientific instrumentation for experiments to help determine properties of particles
  - Collected, processed, and analyzed data to characterize and improve synthesis of particles
  - Completed senior thesis on novel techniques for the analysis of the sedimentation of the particles in solution, presented to 30+ peers and professors
- The synthesis and analysis of the photoconductivity of organic charge transfer materials (PVK-TCNQ) for potential use as/in optoelectronic devices. Funded by DC Space Grant.

## PUBLICATIONS

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Jiang, S., Roy, A., Halverson, S., et al. "Revisiting  $\epsilon$  Eridani with NEID: Identifying New Activity-Sensitive Lines in a Young K Dwarf Star," 2023, The Astronomical Journal, 167, 9, doi: [10.3847/1538-3881/ad0b0b](https://doi.org/10.3847/1538-3881/ad0b0b)

## TEACHING EXPERIENCE

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**Planet Finder Academy** — California Institute of Technology July 2022-Present

- Help coordinate and lead the Caltech Planet Finder Academy for high school students
- Create Jupyter notebooks, tutorials, and exercises to introduce students to fundamentals of coding and exoplanet science
- Assist with day-to-day planning and operations of program, including teaching and presenting various materials

**Teaching Assistant** — Georgetown University Department of Physics September 2019-May 2021

Teaching assistant for PHYS 101: Principles of Physics I and PHYS 102: Principles of Physics II:

- Assisted with the setup/running of labs and helped students work through labs
- Held weekly office hours to assist students with homework/assignments and discuss concepts learned in class

## COMMUNITY INVOLVEMENT

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**Member** — EPRV Research Coordination Network October 2022-Present

- Participate in periodic meetings to help coordinate EPRV research efforts across the community
- Provide input and perspective on relevant goals of the EPRV RCN

**Member** — American Physical Society (APS) — CUWiP Student Advisory Council May 2021-June 2022

- Participated in bi-monthly meetings to help plan for the 2022 and 2023 APS Conferences for Undergraduate Women in Physics (CUWiP)
- Conducted various tasks to help increase engagement, assist with recruitment efforts, and provide feedback on structure and programming

**Co-President** — Georgetown University Astronomical Society September 2019-May 2021

- Planned and ran weekly meetings, including conducting presentations on astronomical topics, and coordinated special events
- Helped maintain the Heyden Observatory, its telescopes, and other historical astronomical materials
- Conducted external outreach by reaching out to professionals in space science and astronomy and hosting speakers

**Undergraduate Liaison** — Georgetown University Women in Physics January 2020-May 2021

- Helped plan and run monthly meetings and assisted with coordinating special events, including conducting external outreach to speakers and facilitating group/panel discussions
- Represented undergraduate interests in the organization while helping plan events and advocacy efforts

**Member** — Georgetown University Physicists Against Racism July 2020-May 2021

**Member** — Georgetown University Society of Physics Students September 2019-May 2021

## SKILLS

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<b>Computing Skills</b>	Python (TensorFlow/Keras), C++, Java, R, SQL, LaTeX, MATLAB, Wolfram Mathematica, Microsoft Office, Git
<b>Languages</b>	English, German

- Highly driven, organized, and efficient, with good multitasking and time management skills
- Extensive experience in scientific programming, data processing and analysis, and machine learning
- Strong background in scientific research and problem solving
- Adaptable, quick learner; comfortable in a dynamic environment
- Ability to work well in a team and/or independently
- Proficient in scientific writing and communication