SARAH JIANG

(224)-409-4107 ◇ Washington, DC
sxjiang2308@gmail.com ◇ sarahxj.github.io ◇ github.com/sarahxj

EDUCATION

Georgetown University — B.S. in Physics August 2017-May 2021
GPA: 3.54

Relevant coursework: Intermediate Mechanics, Intermediate Electricity & Magnetism, Linear Algebra, Mathematical and Computational Methods, Modern Physics and its Experimental Methods, Multivariable Calculus, Principles of Physics I & II, Quantum Mechanics, Relativity & Quantum Physics, Statistical Mechanics, Computer Science I (C++), Intro to Computer Science (Python), Introduction to Astrophysics, Particle Physics and Cosmology

RESEARCH EXPERIENCE

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

Jiang, S., Roy, A., Halverson, S., et al. Revisiting ϵ Eridani with NEID: Identifying New Activity-Sensitive Lines in a Young K Dwarf Star. *Submitted to AJ*.

TEACHING EXPERIENCE

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

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

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

Computing Skills Python (TensorFlow/Keras), C++, Java, R, SQL, LaTeX, MATLAB, Wolfram Mathematica, Microsoft Office, Git

Languages 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