Taotao Yang

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Summary

Recent graduate with a Masters of Science in Astrophysics. Experienced in computational, laboratory, and multidisciplinary research. Currently interested in engaging machine learning with gravitational wave signal space investigations.

Education

University of Glasgow — Glasgow, United Kingdom
Master of Sciences in Astrophysics — *Sept 2022 - Dec 2023*

Georgia Institute of Technology — Atlanta, United States
Bachelor of Sciences in Physics — *Aug 2017 - Dec 2021*

Experience

Georgia Institute of Technology — Atlanta, United States
Student Assistant — *Aug 2021 - Dec 2021*
- Provided LaTeX drafting revisions and lab report commentary in Modern Optics Lab
- Graded weekly lab reports to facilitate optical concept learning and scientific writing formality

Zhejiang Sci-Tech University — Hangzhou, China
Research Assistant — *Aug 2016 - Feb 2017*
- Designed Quadcopter using SolidWorks and 3D printing in Wireless Communication and IoT Lab
- Drafted and finalized patent application materials for patent CN206437196U

TEDxNingbo — Ningbo, China
Assistant Curator — *Oct 2016 - Jun 2017*
- Organized TEDxYouth event in 2017 to promote the community engagement of TEDxNingbo
- Coordinated local high school student band to perform and give talk on TEDxYouth event in 2017

Projects

Gravitational Wave Template Bank Placement — Glasgow, United Kingdom
University of Glasgow — *May 2023 - Present*
- Employ and develpe JAX based python packages for rapid template bank density calculation
- Use Normalizing flows to approximate the generated template bank densities

Radio Telescope Microwave Data Analysis and Data Challenge — Glasgow, United Kingdom
University of Glasgow — *Jan 2023 - Apr 2023*
- Develop python scripts for formatting and visualizing microwave radio emission data
- Read, format, and employ MCMC and Metropolis for fitting mock data entries

Vertically Integrated Project - Patagonia — Atlanta, United States
Georgia Institute of Technology — *Jan 2021 - May 2021*
- Used GIS based data analysis to evaluate strategic infrastructure planning for Patagonia National Park
- Provided GIS inventory support for sustainable carrying capacity model development

Modern Optics Laboratory — Atlanta, United States
Georgia Institute of Technology — *Jan 2021 - May 2021*
- Designed optical apparatus and used laser diode and optical fibers to recreate optical phenomena
- Collected data using digital multimeter and oscilloscope for interference grating and beam cleaning
- Analyzed and visualized laser beam profiles using IGOR and MATLAB

Cosmology Computational Project — Atlanta, United States
Georgia Institute of Technology — *Aug 2020 - Dec 2020*
- Performed numerical integration with Python simulating distance-z relation and lookback time-z relation

Advanced Laboratory — Atlanta, United States
Georgia Institute of Technology — *May 2020 - Aug 2020*
- Recreated Davisson and Germer experiment and Cavendish experiment
- Analysed data using Excel regarding Hall effect, particle-wave duality, and de Broglie's matter wave

Language, Skills, and Awards

Language:	Chinese (Mandarin), English, Python (NumPy, SciPy, JAX), LaTeX, Git, Ubuntu, MATLAB
Software:	Mathematica, GitHub, IGOR, ArcGIS, Blender, SolidWorks, Microsoft Office Suites
Communication:	Scientific Writing, Public Speaking, Presentation
Equipment:	3D Printing, Soldiering, Oscilloscope, Camera
Technical:	Classical Mechanics, Quantum Mechanics, Statistical Mechanics, Electrodynamics
	General Relativity, Cosmology, Nonlinear Dynamics, Thermodynamics, Gravitational Waves
Awards:	Dean's List, Faculty Honors