Taotao Yang

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SUMMARY

Recent graduate with a Masters of Science in Astrophysics and a Bachelor of Science in Physics. Experienced in computational and experimental research with quantitative modelling and numerical methods. Currently invested in engaging machine learning with gravitational wave signal space investigations.

EDUCATION

University of Glasgow — Glasgow, United Kingdom
Master of Sciences in Astrophysics — Sep 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 to promote community engagement of scientific information
- Coordinated local high school student band to perform and give talk on TEDxYouth event

PROJECTS

Gravitational Wave Template Bank Placement — Glasgow, United Kingdom
University of Glasgow — May 2023 - Present
- Employ and develop JAX based python packages for rapid template bank density calculation
- Achieve 5-10 ms template density calculation with continued integration
- Investigate normalizing flows with JAX 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 NumPy based scripts to format, filter, and visualize microwave radio emission data
- 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, English, Python (NumPy, SciPy, JAX, Matplotlib, Pandas), 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