

LITING XIAO

PERSONAL WEBSITE | LINKEDIN | NAOMIXIAO824@GMAIL.COM

EDUCATION	California Institute of Technology (Caltech), Pasadena, CA Ph.D., Physics, 2023; M.S., Physics, 2020 (GPA: 4.1/4.0) <ul style="list-style-type: none">Graduate research assistant at the Laser Interferometer Gravitational-Wave Observatory (LIGO) at Caltech (LIGO founders awarded the Nobel Prize in Physics in 2017)Dissertation: <i>Searching for Gravitational Waves from Compact Binary Coalescences and Stochastic Backgrounds in the LIGO–Virgo Detector Network</i> (Advisor: Prof. Alan J. Weinstein)Relevant coursework: Introduction to Probability Models; Statistical Inference; Bayesian Statistics and Data Analysis; Learning Systems; Machine Learning & Data Mining	2016 – 2022
	University of Virginia (UVA), Charlottesville, VA B.A., High Distinction, Astronomy-Physics; B.A., Mathematics (GPA: 3.8/4.0) <ul style="list-style-type: none">Senior Theses: (1) <i>Probing the Orbital Lifetime and Stability in Kepler Multi-planet Extrasolar Systems</i>; (2) <i>The Occurrence of Compact Groups of Galaxies Through Cosmic Time</i>Honors: Echols Scholar; Lifetime member of American Physics Honor Society – Sigma Pi Sigma; 2015 UVA International Studies Office Award for Academic Excellence; 2014 UVA Outstanding Undergraduate Physics Research Award; 2014 – 2015 and 2013 – 2014 UVA Physics Department Mitchell Scholarship	2011 – 2015
WORK EXPERIENCE	Graham Capital Management, L.P. , Rowayton, CT <i>Senior Quantitative Research Analyst</i> , Quantitative Strategies <i>Quantitative Research Analyst</i> , Quantitative Strategies <ul style="list-style-type: none">Systematic Alpha Research: Spearhead the full-lifecycle development of predictive signals across daily settlement and intraday horizons, applying advanced signal processing and statistical inference techniques to extract persistent alpha from noisy financial time seriesIntraday Trading Architecture: Designed and deployed a standalone, low-latency production pipeline specifically for mid-frequency intraday strategies. Engineered the end-to-end infrastructure to ingest real-time upstream data, compute signals, and transmit automated trade instructions to downstream execution desksPortfolio Optimization: Implement robust portfolio construction frameworks utilizing convex optimization and covariance matrix estimation to dynamically allocate capital while managing transaction costs and liquidity constraintsExecution Analytics & Monitoring: Developed real-time monitoring dashboards and post-trade analytics tools (Python/SQL) to track slippage, detect latency drift, and ensure algorithmic integrity during periods of market stress	2025 – Present 2022 – 2025
PHD RESEARCH HIGHLIGHTS	An Unmodeled Search for Anisotropic Stochastic Gravitational-wave Backgrounds (SGWBs) <ul style="list-style-type: none">Led the development of a Python-based, end-to-end data pipeline to map the intensity of the SGWB signal on the sky in the pixel domain model-independently via maximum likelihood solutionsCast time-segment radiometer analysis to a matrix multiplication problem using folded data and employing efficient parallel processing of data for a speedup of 1000-foldIdentified spectral leakage to neighboring pixels of well-localized simulated sources due to the detector response function through Monte Carlo samplingInvestigated better regularization techniques of inverting the full pixel-pixel Fisher information matrix through adaptive frequency banding and adaptive pixelization in distinct frequency bands	
	Improving the Streamline Gravitational-wave (GW) Detection Pipeline – PyCBC <ul style="list-style-type: none">Collaborated in expanding the search ability of the PyCBC GW detection pipeline by 10%, windowing out a small stretch of data centered on loud instrumental transientsOperated PyCBC to analyze months of time-series data and personally identified 2 GW events during LIGO–Virgo Observing Run 3Characterized confident detections and potential triggers, integrated into an extended catalog of GW transients, and prepared open data release for the astronomical communityExploited signal coherence and noise incoherence in different detectors to improve detection statistic	
SKILLS	<ul style="list-style-type: none">Computing: Python (NumPy, SciPy, Pandas, scikit-learn, TensorFlow, PyTorch), MATLAB, Git, Linux/Shell, Distributed Computing, L^AT_EX, SQLLanguages: English (<i>full professional</i>), Mandarin Chinese (<i>native</i>)	
PUBLICATIONS	<ul style="list-style-type: none">7 short-author list publications in physics and astronomy100+ full-author list publications in physics and astronomy	