

Michelle Gurevich

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EDUCATION

KING'S COLLEGE LONDON

PHD IN THEORETICAL PHYSICS, EXPECTED 2026

- Dissertation – *Novel representations of gravitational wave radiation from general astrophysical sources*

IMPERIAL COLLEGE LONDON

MSC IN PHYSICS WITH EXTENDED RESEARCH, 2022

- Research Thesis – *A phenomenological model for modified gravitational wave dispersion relations*
- Self Study Project – *Machine Learning for 21cm Studies and Cosmology*
- Research Skills Project – *Chaos and fractals*, completed in MATLAB
- Grade achieved: Merit

UNIVERSITY OF MICHIGAN, ANN ARBOR

BSC IN MATHEMATICS WITH A MINOR IN HISTORY OF ART, 2018

RESEARCH EXPERIENCE

IMPERIAL COLLEGE LONDON MSc THESIS

July 2021 – June 2022 | London, UK

- Recreated PyCBC frequency and time domain waveforms (assuming a stationary phase approximation) to develop a phenomenological model for studying gravitational wave signals
- Performed a Fisher analysis to constrain phenomenological parameters describing modified gravity terms in the gravitational wave dispersion relations for LISA and LIGO frequency bands

CERRO TOLOLO INTER-AMERICAN OBSERVATORY UROP

July – August 2016 | La Serena, Chile

- Collaborated on a research project using RR Lyrae variable stars as standard candles to measure galactic distances
- Took observations at the Cerro Tololo 4-m telescope, reduced CCD images, organized and interpreted data catalogues, wrote IRAF scripts to optimize star detection, and presented results

INDUSTRY EXPERIENCE

EXSCIENITIA AI/ACTIVE LEARNING INTERN

July – September 2022 | Oxford, UK

- Characterized edge cases and optimized training sets for an active learning algorithm used to accelerate drug design development
- Collaborated closely with pharmacology and small molecules teams to better understand how to generate better-suited biological targets

JPMORGAN CHASE & CO. SOFTWARE ENGINEER II

June 2018 - September 2020 | New York City, US

- Wrote machine learning algorithm for reducing false positive flagging of SWIFT payment messages, set up and managed database of 30,000 processed messages, and used results to predict validity of critical message fields
- Developed APIs for validating SWIFT payment messages as well as parsing and validating IBANs, wrote scripts for generating and anonymizing sensitive data

SKILLS & INTERESTS

PROGRAMMING

Python • C++ • Java • MATLAB • IRAF • Mathematica • React

LANGUAGES

English • Russian • Spanish

SOCIETIES

Women in Physics • Maxwell Society • Student Astronomical Society (SAS)

MEMBERSHIPS

Graduate Student Member of American Astronomical Society • Member of the Institute of Physics

PUBLICATIONS

C. E. Martínez-Vázquez, A. K. Vivas, M. Gurevich, et al. **Search for RR Lyrae stars in DES ultra-faint systems: Grus I, Kim 2, Phoenix II, and Grus II.** *Monthly Notices of the Royal Astronomical Society*, Volume 490, Issue 2, December 2019.

OUTREACH

Math Club Volunteer: Taught secondary school students the basics of mathematical proof writing and logic puzzles

Detroit Observatory: Operated university telescope and provided free planetarium shows to the community

Force for Good: Developed database for Green City Force, a NYC-based AmeriCorps nonprofit

AWARDS

4Cs Science Communication Competition: Selected to present research to a panel of expert judges at Imperial College London. One of a group of 13 postgraduates picked from applicant pool.