LIHAO YAN

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EDUCATION

Yale University *May 2027*
Ph.D. in Physics

University of Notre Dame *May 2021*
B.S. in Physics (Honors)
Double Major in Philosophy
GPA: 3.904
Honors: The Dean's Research Award, *cum laude*

RESEARCH EXPERIENCE

Computational Neuroscience On Going
New Haven, CT

- Supervised by my Ph.D. advisor Prof. Monika Jadi on computational neuroscience
- **Analyzing electrophysiology data recorded in macaques' visual cortical regions V1 & V4**
- Preprocessing the local field potential data with bandpass filter and the Hilbert Transformation
- Analyzing the traveling wave type patterns in the transformed local field potential
- Studying the origins of the traveling waves and showed that the input layer of the visual cortex is the least likely location of the origin of the wave

Theoretical Optical Physics September 2022 - December 2022
New Haven, CT

- Did a semester long rotation project with Prof. Douglas Stone on the Steady-state *ab initio* Laser Theory (SALT)
- **Implemented a numerical code for solving arbitrary 1D laser cavities using SALT with single-pole approximation**
- Compared two different approximation regimes of the numerical SALT
- Prepared a tutorial article for SALT with single-pole approximation

Theoretical Condensed Matter Physics May 2022 – August 2022
New Haven, CT

- Worked on using information geometry to study spin glass systems under the direction of Prof. Nicholas Read at Yale University
- Investigated how the divergence of mutual information between the pure states of a spin glass relates to the spin-spin correlation functions

Theoretical Condensed Matter Physics September 2019 – May 2021
Notre Dame, IN

- Worked on confined vortex matter in mesoscopic superconductors under the direction of Prof. Boldizsár Jankó at the University of Notre Dame and in collaboration with Prof. Milorad Milošević from the University of Antwerp
- **Showed that the triangular superconductor samples can be used to identify experimentally the existence of the anisotropic interaction and unconventional pairing**

- Used numerical Ginzburg-Landau calculations and molecular dynamics (MD) simulations to systematically study how the vortices rearrange themselves in mesoscopic containers when the anisotropic interaction is presented

HONORS & AWARDS

The Dean's Research Award May 2021
The recipient of the Class of 2021 *Notre Dame, IN*

Eagan Summer Fellowship 2018 – 2021
Awarded $5000 summer research funding each year for three years *Notre Dame, IN*

TECHNICAL SKILLS

Programming	C/C++, Python, Unix Shell Scripting, MATLAB, Mathematica, FORTRAN
Engineering Software	ANSYS, COMSOL, Autodesk Inventor, Autodesk Eagle
Others	Linux, Git, LaTeX