Matthew Li

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EDUCATION

Stanford University   **June 2028 (Expected)**
Bachelor of Science in Physics   *Stanford, California*
- GPA: 4.0
- Notable Coursework: Linear Algebra, PDEs, Complex Variables, Data Structures (C++), Quantum Mechanics

EXPERIENCE

Computational Physics Researcher   **Sep 2022 - Nov 2024**
National Science Foundation, University of North Texas   *Denton, Texas*
- Utilized parallel processing in Python and wrote Bash scripts for the Lonestar6 supercomputer to decrease the runtime of sound wave propagation models by a factor of 128
- Created a clustering algorithm that successfully classified band structure eigenvalues in a noisy dataset
- Developed computational methods using SciPy and NumPy to solve quadratic eigenvalue problems
- Modeled systems governed by the Navier-Stokes equations using the Fourier transform
- Presented work twice at the National Science Foundation Emerging Researchers National Conference
- First author of paper under review for the *Journal of the Acoustical Society of America*

Modern Physics Laboratory Student   **Aug - Dec 2022**
University of North Texas   *Denton, Texas*
- Conducted experiments using interferometry, diffraction, and atomic physics apparatuses
- Processed and visualized data using regressions and statistical functions in Excel and Python

Summer Research Fellow   **May - Aug 2022**
National Science Foundation, University of North Texas   *Denton, Texas*
- Designed a FEM model in COMSOL Multiphysics that optimized crystal geometries for band gap width
- Presented results at weekly lab meetings and wrote end of summer report using LaTeX

AWARDS

- **Silver Medallist, United States Physics Olympiad:** Top 1% in national theoretical physics exam   **May 2024**
- **Best Undergraduate Physics Presentation, National Science Foundation Research Conference**   **Mar 2024**
- **2x AIME Qualifier:** Top 5% in national mathematics exam   **Feb 2023, 2024**
- **15th Nationally, Princeton Physics Competition**   **Jan 2023**
- **All State Cellist:** Top 16 cellist in Texas   **Feb 2021**

VOLUNTEER WORK

Teaching Fellow at Breakthrough New York, 501(c)(3)   **Jun - Aug 2024**
- Taught two full 9th grade classrooms Algebra 1 daily using a personally developed curriculum
- Led extracurricular activities such as an egg drop, talent show, and card writing for veterans

Math Extensions at Evers Park Elementary School   **Oct 2023 - May 2024**
- Founded biweekly in-school math program for 5th grade class at a Title 1 elementary school

President of UNT IntelliChoice Club   **Mar 2023 - May 2024**
- Organized 450 hours of tutoring for students at a local public library

SKILLS

Python, C++, Bash, Mathematica, Excel