Nathan C. Song
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Education

University of California, Berkeley *Berkeley, CA*
B.A. Physics, B.A. Mathematics, GPA: 3.64 *Grad. May 2025 (est.)*

- Relevant Coursework (Current, *Old*):

Physics 137A (QM), **Physics 110A** (Electrodynamics), **Math 124** (Mathematical Programming), **Math 104** (Intro. Analysis), ***Physics 105*** *(Analytic Mechanics),* ***Math 118*** *(Fourier),* ***Math 113*** *(Abstract Algebra),* ***Math 110*** *(Linear Algebra),* ***Math 55*** *(Discrete Mathematics)* ***Math W128A*** *(Numerical Analysis),* ***Physics 89*** *(Intro Mathematical Physics),* ***Physics 5A, 5B, 5BL, 5C, 5CL*** *(Intro Physics Series)*

Work Experience

Student Ambassador *marketGOATS* *November 2022- January 2023*
Course Reader *ISF 10* *September 2022- December 2022*
IMPACT-NG REU *Undergraduate Researcher* *June 2022 – August 2022*

- Created MEMs (Microelectromechanical) structures that latched onto fiber meshes. Electrically characterized said "grippers" across different operating conditions and proved their potential to make fully flexible circuits.
- Presented at NNCI Nano + Additive Manufacturing Summit. Submitted paper to Journal of Micro-Bio Robotics; Currently writing paper for JIEE-FLEPS
- *Relevant Skills:* Photolithography, SEM, Mask Design, Xenon Etching, Metal Deposition, Plasma cleaning, Wet etching, Parylene deposition, NEXUS (See U. of L), Probe station

Ultrafast NanoOptics Group *Undergraduate Researcher* *September 2021- May 2022*

- Investigated novel properties of 2D materials with optical spectroscopy. Proficient in AFM, photolithography, PC-film manufacturing and exfoliation.

Fluxergy *Junior Web Developer* *April 2021 – August 2022*

- Created current Fluxergy.com website while communicating with CEO/Advisory Board. Captured long-term corporate vision and optimized user experience.
- Used SEO data to optimize site search. Doubled website loading speed and streamlined customer integration with ActiveCampaign. Created guidelines for cleaner site maintenance and UI choices.

Skills

Languages: Python, Julia, Mathematica, Rust, Matlab, HTML+CSS

Tools and Frameworks: Pytorch, Pandas, NumPy, nalgebra, Rapier, Seaborn, OpenCV, Matplotlib

Activities

Physics Directed Reading Program
Did a deep reading of Annett's superconductivity covering Bose-Einstein condensates and statistical thermodynamics. Gave departmental presentation at end of semester on Type I/II superconductors.
STEAM For All
Outreach program for schools in Orange County / surrounding districts. Wrote 200+ AMC-style problems for biannual tournaments attended by ~250 middle school students. Lead monthly workshops for ~16 students on competitive math.
PacificSTEM
Outreach program for high schools in La Mirada / Diamond Bar. Lead student group to find speakers for annual STEM networking event from JPL, Mars Food, and CrowdStrike. Shifted event to Zoom format within a month (COVID-19), attendance ~50 high school students.

Honors and Awards

The Leadership Award (UC Berkeley), President's Gold Volunteer Service Award (X2), National Merit Semifinalist, AIME