Shengzhe Li

Tel: (+86) 15111593537 | shengzhe2000@icloud.com | GitHub | Homepage

Education

University of Amsterdam — Amsterdam, The Netherlands
M.S. in Physics (in progress) — Sep. 2024 – Present

- GPA: 8.06 / 10.00
- *Coursework*: Quantum Field Theory(QFT), AQFT, Condensed Matter Theory(CMT), ACMT, Advanced numerical methods in many-body physics, Group Theory, Mathematical Methods for Physics, Non-equilibrium Statistical Mechanics, Topological Materials, Correlated Quantum matter.

Sichuan University — Chengdu, China
B.S. in Physics — Sep. 2021 – Jun. 2024

- GPA: 3.75/4.0 Average: 88.95/100 Rank: 14/103.
- *Coursework*: Quantum Mechanics, Electrodynamics, Statistical Physics, Computational Physics, Optics.

National Tsing Hua University (NTHU), Taiwan — Hsinchu
Exchange Student, Department of Physics — Sep. 2023 – Jan. 2024

Research Experience

Exciton–Phonon–Photon Dynamics in 2D Semiconductors
Graduate Researcher / Research Assistant — Sep. 2024 – Present
Your University / Lab Name — Supervisor: Prof. ___

- Derived and implemented exciton–phonon scattering kernels within a quantum Boltzmann equation (Born–Markov, factorization), connecting microscopic Hamiltonians to numerical rates.
- Integrated transfer-matrix-method (TMM) optics for multilayer stacks (e.g., hBN/SiO_2/Si), modeling momentum-resolved emission and environment-dependent radiative channels.
- Built reproducible Python pipelines (NumPy/Numba/Matplotlib) for parameter sweeps (temperature, thickness, k-space bins) and PL/QY observables.
- Diagnosed numerical/physical artifacts (light-cone cutoffs, interpolation/integration bounds, convergence instabilities) and improved robustness via validated baselines.

Dynamical Phase Transitions in the Kinouchi–Copelli Neuronal Network
Undergraduate Research Assistant — Sep. 2023 – Jan. 2024
National Tsing Hua University (NTHU), Taiwan — Supervisor: Prof. Hsiu-Hau Lin

- Performed mean-field analysis and Monte Carlo simulations near criticality to characterize a second-order phase transition and emergent synchronization.
- Compared analytical predictions with simulation data and prepared figures/notes for group discussions.

Honors & Awards

Second Prize, National Mathematics Competition for University Students (Provincial) — Mar 2023
Scholarship for Yan Ji-Ci Class, Institute of Physics, Chinese Academy of Sciences — 2020–2022
Single-Item First-Class Scholarship, Sichuan University — 2019–2020

Technical Skills

Languages: Mandarin (Native), English (IELTS: 7.0)
Programming: Python (NumPy, Numba, Matplotlib), Mathematica, Git, LaTeX
Methods: numerical integration/interpolation, parameter sweeps, reproducible scientific pipelines, multilayer optics (TMM)