

# Yingjian Liu

## Curriculum Vitae

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## Education

- Sep 2021 - **Europhotonics Erasmus Mundus Master Degrees**, European Union.
- Oct 2023 M.Sc. in Photonics Engineering, *Polytechnic University of Catalonia*, Barcelona, Spain. GPA: 8.79/10
- M.Sc. in Optics and Photonics, *Karlsruhe Institute of Technology*, Karlsruhe, Germany. GPA: 1.6/5.0
- M.Sc. in Physics, *Aix-Marseille University*, Marseille, France.
- Sep 2017 - **Bachelor of Science in Electronics Engineering**, *Shandong University*, Qingdao, China.
- Jun 2021 Specialization: Optics and Applied Physics. GPA: 88.57/100

## Research Experience

- May 2023 - **Thesis Student**, *ICFO – The Institute of Photonic Sciences*, Barcelona, Spain.
- Oct 2023 Advisors: Dr. Marcin Płodzień, Dr. Paolo Stornati and Prof. Maciej Lewenstein
  - Developed new quantum algorithms for probing localization in many-body physics.
  - Numerical simulation of non-equilibrium quantum systems.
  - Tested the performance of Hamiltonian learning via quantum variational algorithms.📄 Thesis: Variational Quantum Simulation of Many-body Quantum Systems. Grade: 1.0/5.0
- Aug 2022 - **Research Internship**, *Ghent University*, Ghent, Belgium.
- Dec 2022 Advisor: Prof. Jeroem Beeckman
  - Topic: Holographic Projection using Geometric Phase Optics.
  - Worked on geometric phase in optics for holography and developed phase retrieval algorithm in imaging optics.
- Feb 2022 - **Research Internship**, *Karlsruhe Institute of Technology*, Karlsruhe, Germany.
- Apr 2022 Advisor: Dr. Sisi Miao
  - Topic: Novel quantum error correction code for a large scale of qubits.
  - Improved performance of laser optical communication through LDPC codes and its quantum version.
- Feb 2021 - **Research Internship**, *Institute for Quantum Computing, Baidu Research*, Beijing, China.
- Aug 2021 Advisors: Prof. Xin Wang and Prof. Runyao Duan
  - Topic: Quantum computing in NISQ era.
  - Developed and updated the python SDK  *Quanlse*.
  - Simulated and mitigated quantum noise for superconducting devices at pulse-level control.
- Sep 2020 - **Thesis Student**, *Shandong University*, Qingdao, China.
- Feb 2021 Advisor: Prof. Xueyuan Hu
  - Quantum resource theory about quantum entanglement and coherence.
  - Quantified the resource for distilling isotropic state in different quantum channels.Thesis: Boundaries for Distilling Single Entangled State.

## Skills

- IT Skills Python, Matlab, Mathematica, Qiskit, Zemax
- Languages Chinese (native), English (fluent), French (beginner), German (beginner)

## Scholarships and Awards

- 2021 - 2023 **Erasmus Mundus Joint Master Degree (EMJMD) Scholarship**, *Europhotonics*, European Union.
- 2019 **National Encouragement Scholarship**, *Ministry of Education*, China.
- 2018 **Academic Scholarship**, *Shandong University*, China.
- 2018 **Second Prize of 9th Mathematical Competition**, *Shandong Mathematical Society*, China.