

Thi D. Hoang

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Education

Aug 2021— **Degree:** Doctoral of Philosophy in Physics (Quantum Optics)
Aug 2027 (projected) **Where:** University of Colorado, Boulder, CO

Research Direction: There are many unknown about quantum technology, but one thing is clear: Photons will be the key to communication across quantum platforms. My research focuses on engineering light-matter coupling to build single-photon sources towards applications in quantum networking.

Expertise: Quantum information hardware with solid state (on-chip) environment. Optical engineering and simulation. Electronic design (analog, PCB, digital). Cryogenic equipment and experiments.

September 2016— **Degree:** Bachelor of Arts in **Physics**, minor: Education Studies
February 2021 **Where:** Middlebury College, Middlebury, VT

February 2019— **Degree:** Exchange Program Abroad in Physics & Astronomy Department
June 2019 **Where:** University of Nottingham, Nottingham, UK

Publications and Proceedings

- Thi D. Hoang et al. “A Compact, Robust, and Tunable Open Microcavity Platform for Solid-State Quantum Electrodynamics”. In: *Optica Quantum* ()
- Wenjing Wu et al. “Ultrahigh-Purity Single-Photon Emission from 2D WSe₂ via Effective Suppression of Classical Emission”. In: *Nano Letters* 25.29 (July 23, 2025), pp. 11226–11233. ISSN: 1530-6984. DOI: 10.1021/acs.nanolett.5c01718
- Thi D. Hoang et al. “A compact open microcavity platform for solid-state quantum electrodynamics (invited)”. In: *Quantum Computing, Communication, and Simulation VI*. Vol. PC13919. International Society for Optics and Photonics. SPIE, 2026, PC139190K. DOI: 10.1117/12.3081530. URL: <https://doi.org/10.1117/12.3081530>
- Thi D Hoang et al. “Building a compact and robust single-photon source with a quantum dot inside a tunable microcavity”. In: *CLEO 2025*. Optica Publishing Group, 2025, FF110₄. DOI: 10.1364/CLEO_FS.2025.FF110_4. URL: https://opg.optica.org/abstract.cfm?URI=CLEO_FS-2025-FF110_4

Other Research Experiences

June 2019—
December 2020

Project: Photon absorption in cold ^{85}Rb atoms - theory and experiment

Where: Middlebury College, Middlebury, VT

Advisor: Anne Goodsell

Contributions:

- Applied theoretical model of photon absorption in warm ^{85}Rb to predicting absorption in a cloud of ^{85}Rb gas at sub-Kelvin temperature.
- Tested hypotheses by designing and running experiments with sub-Kelvin atoms, e.g. obtaining a spectrum of cold ^{85}Rb D_2 line with minimal Doppler broadening.

September 2020—
December 2020

Project: Entanglement in BEC

Where: Middlebury College, Middlebury, VT

Advisor: Chris Herdman

Contributions: Set up calculations to find the negativity of a bosonic system of N particles divided into two or three sites, which models a BEC of two or three spatial divisions with different probability of the particle to be in each of the division.

Patent

Provisional Patent No.: 63/962,029. Title: *Single-Photon Source- Based on a Quantum Emitter in an Open Microcavity*

Honors and awards

- Winner, Quantum Science Slam competition at CLEO 2025
- Special Outstanding Service Award, Department of Physics, Uni of Colorado Boulder (2025)
- Semester at Sea Davis Scholar (2019)
- UWC Davis Scholar (2016 - 2020)
- Student Leadership Award, Middlebury College (2018)
- Student Public Leadership Award, Middlebury College (2018)

Work Experience

September 2021—
December 2021

Position: Teaching Assistant

Where: Dept. of Physics, University of Colorado Boulder

Served as teaching assistant and grader for two courses: PHYS 1140 (Experimental Physics 1) and PHYS 2170 (Foundations of Modern Physics)

December 2020—
July 2021

Position: Head of Operations (Remote)
Where: Boltz.ai

I served as the Head of Operations at Boltz.ai, an accelerator-stage Toronto-based startup that aims at applying quantum optimization algorithm in the field of agriculture to help make agricultural production more efficient. I pitched for the startup and participated in CENTECH, an acceleration program in Montreal, where I learned about building a deep-tech startup from the ground up.

September 2017—
December 2020

Position: Teaching Assistant
Where: Dept. of Physics, Middlebury College

I worked as an undergraduate teaching assistant in three introductory physics courses.

Public Services

December 2023—
January 2025
Physics - CU Boulder

Position: Organization Committee Core Member
Where: APS Conference for Undergraduate Women and Minorities in Physics - CU Boulder (CU*iP)

Served as one of six core members of the organizing committee, putting together a 3-day conference for 179 participants from 35 institutions. Through the conference, I offered mentorship to undergraduate students navigating a career in physics both in academia and in industry.

April 2021—
September 2021

Position: Co-director of Program
Where: Headway

Led the program team to ideate and execute our first Headway Bootcamp, where we incubated ideas for scientific research projects and social impact projects from youth in Vietnam.

June 2016—
June 2021

Position: Co-founder
Where: *Bóng Đèn (Lightbulb)* - Educational NGO in STEM

In 2016, I co-founded *Bóng Đèn*, an educational NGO that organizes hands-on STEM activities in two cities in Vietnam for middle-school students. Our flagship program is the *Bóng Đèn* science summer camp, the first of its kind in our cities, which serves 120+ students each summer.