

Thomas Bourke

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Citizenship: United Kingdom

Research interests

Quantum optics, semiconductor physics, III-V materials, quantum communications and sensing

Education

- 2025 – Present **University of Cambridge (Darwin College)** – Cambridge, United Kingdom
PhD Candidate in Physics (industry co-supervised project with Toshiba)
Mentors: Prof. Louise Hirst, Dr. Mark Stevenson
- 2021 – 2025 **University of Bath** – Bath, United Kingdom
Master of Physics
Mentors: Dr. Adelina Ilie. *First-class honours.*

Honors and scholarships

- 2024 Hackathon bursary (National Quantum Computing Centre)
Travel bursary for 3-day hackathon held at University of Warwick.

Publications

- 2021 **Title of your most recent research paper**
First author, second author, third author, fourth author.
Journal of something or the other.

Research experience

- Oct. 2024 – Jan. 2025 **Moiré pattern imprints magneto-electricity in nickel di-iodide superlattice**
Mentors: Ilie, A. (University of Bath).
Final year project showed evidence of magneto-electricity in NiI₂ using scanning tunneling microscopy (STM). Summary of findings available [here](#).
- July 2024 **Network Flow Search**
National Quantum Computing Centre hackathon (University of Warwick).
Implemented Grover's algorithm to identify a malicious packet from a network log. Summary of findings available [here](#).
- April 2024 **Quantum communications review**
University of Bath.
Conducted a literature review on Quantum Key Distribution (BB84 QKD), using databases including Web of Science and Google Scholar. Summary of findings available [here](#).

Teaching experience

- Fall 2020 **Teaching assistant, STAT 123: Course name here (University)**
Topics and description of your responsibilities. Aliquam volutpat est vel massa. Sed dolor lacus, imperdiet non, ornare non, commodo eu, neque.
Average student rating: X/5.
- Spring 2020 **Teaching assistant, MATH 234: Course name here (University)**
Topics and description of your responsibilities. Aliquam volutpat est vel massa. Sed dolor lacus, imperdiet non, ornare non, commodo eu, neque.
Average student rating: X/5.

Industry experience

- Oct. 2024 - present **Toshiba Research Europe (Doctoral Student)** – Cambridge, United Kingdom
Carried out research in Toshiba's Cambridge Research Laboratory on single-photon avalanche diodes.
- Summer 2024 **Leonardo (Systems Engineer)** – Edinburgh, United Kingdom
Developed an automated data extraction tool for surveillance radar data using Python and MySQL.

Talks and tutorials

Month Year	Title of your most recent presentation <i>Name of conference, workshop, seminar, etc., or a description</i>
Month Year	Title of your second most recent presentation <i>Name of conference, workshop, seminar, etc., or a description</i>
Month Year	Title of your third most recent presentation <i>Name of conference, workshop, seminar, etc., or a description</i>

Professional memberships

2025 – Present	Institute of Physics Member <i>Short description or conferences you attended.</i>
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Technical skills

Programming languages

Proficient in: language 1, language 2, language 3

Familiar with: language 4, language 5

Software

L^AT_EX, Git, another piece of software

Languages

English (fluent), Another language (advanced)

Other interests

Some of your hobbies, etc.