THOMAS BOURKE

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Cavendish Laboratory ◇ Cambridge, United Kingdom

RESEARCH INTERESTS

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

EDUCATION

University of Cambridge · 2025 - present
PhD Candidate in Physics (industry co-supervised project with Toshiba)
Supervisors: Louise Hirst, Mark Stevenson

Member of Darwin College
Member of EPSRC CDT in Nanoscience and Nanotechnology (NanoDTC)

University of Bath · 2021 - 2025
Master of Physics, *First-class honours*
Final year project: Novel 2D materials for emerging IT technologies. See summary here.
Supervisors: Adelina Ilie, Kei Takashina
Select modules: Advanced quantum theory, nanoscience, photonics, mathematical physics, advanced problem solving

Member of PhySoc

EXPERIENCE

Toshiba Research Europe · Oct. 2025 - Present
Doctoral Student · *Cambridge, UK*

· Carried out research in Toshiba's Cambridge Research Laboratory on single-photon avalanche diodes.

Leonardo · Summer 2024
Systems Engineering summer intern · *Edinburgh, UK*

· Developed an automated data extraction tool for radar systems using Python.
· Created a SQL database to streamline storage and retrieval of radar surveillance data.
· Prepared and delivered poster presentations to diverse audiences from within the company.

EVENTS AND CONFERENCES

National Quantum Hackathon, NQCC · *University of Warwick, July 2024*
Tackled Grover search problem at 3-day hackathon, which concluded in a presentation delivering our findings to the rest of the cohort. See summary here.

PhySoc Hackathon · *University of Bath, March 2024*
Awarded 2nd place in astrophysics themed hackathon in which I created a black hole 3D model using Blender.

Careers in Quantum · *University of Bristol, March 2024*
Networked with academics and industry professionals at University of Bristol Quantum Engineering CDT.

Oxford Physics Summit · *University of Oxford, Feb. 2024*
Attended lectures from faculty including Sir Roger Penrose and Prof Alexander Lvovsky, networked with young career researchers from across the UK.

TECHNICAL SKILLS

Computer Languages   Python, C++, MATLAB
Databases   MySQL
Tools   Git, VS Code, LaTeX, COMSOL