

Charles London

DPhil STUDENT · COMPUTER SCIENCE · UNIVERSITY OF OXFORD

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Education

University of Oxford

10/23 - Now

DPhil COMPUTER SCIENCE

University of Oxford

10/20 - 1/22

MSc COMPUTER SCIENCE (DISTINCTION)

University of Cambridge

10/16 - 6/19

BA COMPUTER SCIENCE W/ PHYSICS (FIRST CLASS)

Professional Experience

Quantinuum

3/22 - 7/23

NLP RESEARCH ENGINEER

Publications

JOURNAL AND CONFERENCE PAPERS

“Pause Tokens Strictly Increase the Expressivity of Constant-Depth Transformers” **London C** and Kanade V. In *NeurIPS*, 2025.

“REAL: Benchmarking Autonomous Agents on Deterministic Simulations of Real Websites” Garg D, VanWeelden S ... **London C** ... and Motwani S. In *NeurIPS Datasets and Benchmarks*, 2025.

“Solve Layerwise Linear Models First to Understand Neural Dynamical Phenomena” Nam Y, Lee S H, Dominé C, Park Y, **London C**, Choi W, Göring N and Lee S. In *ICML Position Papers*, 2025.

“Peptide Binding Classification on Quantum Computers” **London C**, Brown D, Xu W, Vatansever S, Langmead C J, Kartsaklis D, Clark S and Meichanetzidis K. In *Springer Quantum Machine Intelligence*, 2024.

WORKSHOP PAPERS

“Disentangling Feature Learning from Generalization in Neural Networks” Göring N, **London C**, Erturk A H, Mingard C, Nam Y and Louis A. In *ICML Workshop on High-Dimensional Learning Dynamics*, 2025.

PREPRINTS AND SUBMITTED PAPERS

“h1: Bootstrapping LLMs to Reason over Longer Horizons via Reinforcement Learning” Motwani S, Ivanova A, Cai Z, Torr P, Islam R, Shah S, Schroeder de Witt C and **London C**. In *arXiv preprint arXiv:2510.07312*, 2025.

“Characterising the Inductive Biases of Neural Networks on Boolean Data” Mingard C, Seier L, Göring N, Badelita A-V, **London C** and Louis A. In *arXiv preprint arXiv:2505.24060*, 2025.

“Exploiting the Equivalence between Quantum Neural Networks and Perceptrons” Mingard C, Pointing J, **London C**, Nam Y, and Louis A. In *arXiv preprint arXiv:2407.04371*, 2024.

Awards & Scholarships

2023 **EPSRC Scholarship**, University of Oxford

Full DPhil funding

2019 **Senior Scholarship**, Trinity College, University of Cambridge

2018 **Senior Scholarship**, Trinity College, University of Cambridge

Teaching Experience

MT 2024 **Computational Learning Theory**, Departmental Tutor

MT 2023 **Computational Learning Theory**, Departmental Tutor

Development

- 2025 **Economics of transformative AI summer school**, Stanford University
- 2024 **Machine learning theory summer school**, Princeton University
- 2022 **Computational neuroscience course**, Neuromatch Academy