Charles London

DPhil Student · Computer Science · University of Oxford

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Education

Trinity College, University of Oxford *10/23 - Now*

DPhil Computer Science

- Supervisor: Prof. Varun Kanade
- Continual learning theory, expressivity and learnability of NNs.
- Affiliated with Louis group in Dept. of Theoretical Physics.

Wolfson College, University of Oxford *10/20 - 1/22*

MSc Computer Science (Distinction)

- Thesis supervisor: Prof. Yarin Gal
- Averaged 89% in examinations

Trinity College, University of Cambridge *10/16 - 6/19*

BA Computer Science w/ Physics (First Class)

- Thesis supervisor: Prof. Pietro Liò

Professional Experience

Quantinuum *3/22 - 7/23*

NLP Research Engineer

- Compositional theory of language.
- Engineer on lambeq, QNLP Python library.

Nivaura *7/19 - 9/19*

Analyst Intern

- Developed grammar for generalised legal markup language (GLML).

Softwire *7/18 - 9/18*

Software Developer Intern

- Online multiplayer game development in C# using ASP.NET.

Nike Tennis Camp, Lake Tahoe *7/16 & 7/17*

Coach

Publications

Journal papers

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

Conference Abstracts

Ridout, S., Nemenman, I., Louis, A., Mingard, C., Grabarczyk, R., Dingle, K., Valle Pérez, G. and **London, C.**, 2024. *Bounds on learning with power-law priors.* Bulletin of the American Physical Society.

Kartsaklis, D., Fan, I., Yeung, R., Hoffmann, T., Kocijan, V., **London, C.**, Pearson, A., Lorenz, R., Toumi, A., de Felice, G. and Meichanetzidis, K., 2022. *Quantum NLP with lambeq.* Applied Category Theory.

Preprints and submitted papers

London, C., Kanade, V., 2025. *On the Expressivity of Transformers with Pause Tokens.*

Nam, Y., Lee, S. H., Dominé, C., Park Y., **London, C.**, Choi, W., Göring, N., Lee, S., 2025. *Solve Layerwise Linear Models First to Understand Neural Dynamical Phenomena.* arXiv preprint arXiv:2502.21009.

Göring, N., **London, C.**, Erturk, A. H., Mingard, C., Nam, Y., Louis, A., 2025. *Feature Learning Is Decoupled From Generalization In High-Capacity Neural Networks.*

Mingard, C., Pointing, J., **London, C.**, Nam, Y., and Louis, A., 2024. *Exploiting the equivalence between quantum neural networks and perceptrons.* arXiv preprint arXiv:2407.04371.

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 course**, BlueDot Impact
2024 **Machine learning theory summer school**, Princeton University
2022 **Computational neuroscience course**, Neuromatch Academy