

PAUL MARTIN

PhD Student • Language Technology Lab • University of Cambridge

I am a PhD student in the Language Technology Lab at the University of Cambridge, focusing on **Modular and Efficient Deep Learning for NLP** under supervision by Ivan Vulić and Edoardo Ponti.

Previously, I obtained my Master of Informatics (MInf) in 2024 from the University of Edinburgh, where I worked on Distributed Training and Cross-Architecture Knowledge Distillation, supervised by Hao Tang.

CONTACT

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WEBSITE

PaulsBitsAndBytes.com

AWARDS

80% thesis mark
77% degree average

RESEARCH INTERESTS

Modular Deep Learning
Efficient, Distributed Training
& Inference
Natural Language Processing

OTHER INTERESTS

Photography
Long-Distance Running
Hiking in the Scottish
Highlands

LANGUAGES

English (native)
German (native)
Spanish (learning)

EDUCATION

PhD at the Language Technology Lab

University of Cambridge (2024 - 2028)

- Researching modular architectures to improve the efficiency of deep learning models
- Supervised by Ivan Vulić and Edoardo Ponti

MInf Informatics

University of Edinburgh (2019 - 2024)

- Specializing in Deep Learning and conducting research on distributed optimisation of neural networks for my Master's Thesis
- Achieved an outstanding 80% in my Bachelor's Thesis and 77% overall

Exchange Year

University of Hong Kong (2021 - 2022)

- Selected for my first choice destination out of 800+ applicants.
- Relevant topics: Machine Learning, AI Project, Computer Vision, Big data

EXPERIENCE

Teaching Assistant for Machine Learning

The University of Edinburgh (AY 2023/24)

- Guiding students in Machine Learning through in-person and online assistance, providing clarifications on theory and applications.

Research Assistant Intern

With Kartic Subr, The University of Edinburgh (Summer 2023)

- Led research on using Graph Neural Networks for spectral coarsening of 3D meshes.
- Trained models on approximate gradients from physics simulations.

Tutor for Machine Learning

The University of Edinburgh (AY 2022/23)

- Led a series of workshops for a Machine Learning course, supporting 3rd and 4th-year informatics students in their studies of ML techniques.

ML Intern for Natural Language Processing

Migrasia Global Solutions (Sep - Dec 2021)

- Developed NLP tools to combat forced labour among refugees and migrant workers in Hong Kong.
- Engineered a multilingual sentiment analysis tool and topic classifier for Facebook messages, and investigated biases in Hong Kong's judiciary by processing judgements at scale.

RESEARCH PROJECTS

[For more research projects, visit my website](#)

Master's Thesis: Distributed Optimisation of Deep Neural Networks (2023/2024)

Researching optimisers for the distributed training of deep neural networks, contributing to the field of scalable, efficient neural network training.

Bachelor's Thesis: Cross-Architecture Knowledge Distillation for Automatic Speech Recognition (2022/23)

Achieved an **80% mark** developing knowledge distillation techniques for models with mismatched output dimensions, providing insights into effective model compression strategies and architecture trade-offs.

○ **Spectral Coarsening using GNNs** (Aug 2023)

Explored the application of Graph Neural Networks to accelerate parameter set determination for 3D meshes, enhancing subsequent physics simulations' efficiency. During a research internship with Kartic Subr.

○ **Review of a Biologically Inspired Neural Network to Model PTSD and Eye Movement Desensitisation Reprocessing Therapy** (Apr 2023)

Coursework in Computational Cognitive Neuroscience, taught by Peggy Seriès. Achieved an 80% mark.