**Damian Borowiec | PhD |** Research Software Engineer - *(LLMs, ML, Distributed Systems)*
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## Professional Summary

Results-driven Research Software Engineer with a PhD in Deep Learning compiler optimisation that specialises in ML / LLM systems engineering and ML workload orchestration at scale. Adept at leading and executing end-to-end engineering and research projects, including systems design, development and evaluation.

## Experience

nPlan.io | **Senior Research Software Engineer**
London, England *(Remote)* **Mar 2023 – Present**

- Designed and developed end-to-end, hybrid LLM/graph applications (now part of SaaS offering)
- Trained, fine-tuned and domain-adapted open source LLMs and custom GNN models
- Led adoption of LLMs and LLMOps in the R&D department and product teams
- Facilitated knowledge and prototype transfer from R&D into product, leading integration and evaluation

Huawei R&D | **Research Intern** *(Concurrent to PhD)*
Edinburgh, Scotland *(Remote)* **Jun 2022 – Sep 2022**

- Developed research prototypes in Cloud and serverless scheduling and resource management
- Utilised custom containerisation technologies

Lancaster University | **Junior Lecturer** *(Concurrent to PhD)*
Lancaster, England *(Hybrid)* **Oct 2019 – Sep 2022**

- Delivered lectures, supervised workshops, marked assignments led 1-on-1s with BSc / MSc students
- Focus: Machine Learning, Distributed Systems, Operating Systems, Languages and Compilation

Microsoft R&D | **Research Associate** *(Concurrent to PhD)*
Cambridge, England *(Remote)* **Nov 2019 – Apr 2021**

- Performed data coding (QDC), analysis & modelling on proprietary qualitative remote meetings data
- Co-authored 2 publications at CHI and CSCW

Digital Transit | **Data Analytics Engineer** *(Summer Project)*
Lancaster, England **Jul 2018 – Oct 2018**

- Designed, developed and evaluated an analytics platform for identifying railway infrastructure faults using real-time data from on-board train sensors
- Deployed high-performance infrastructure (private GPU cluster and K8S) to host the analytics platform, maintaining reliability, data integrity and security

Lancaster University | **Junior Engineer** *(Concurrent to BSc)*
Lancaster, England **Aug 2016 – Feb 2018**

- Designed and developed web applications for the Lancaster University Library: an incident reporting app and geospatial physical book mapping platform
- Applications continue to be used by >10,000 students

## Stack

**Languages** *(ordered by experience)*:

- Python, HTML/CSS, TS, SQL, LaTeX, Go, Java, C, C++, X86 Assembly

**ML/LLMs:**

- Hugging Face (Transformers, PEFT, Accelerate, TGI), PyTorch, NumPy, Pandas, TVM, Nvidia (CUDA, CUPTI), Weights & Biases, Vertex AI, OpenAI, Anthropic, LangChain, LangFuse

**Systems / Cloud / DBs:**

- GCP, Git, Kubernetes, Docker, Linux, Linux kernel, GCC, Make, MongoDB, PostgreSQL

## Education

Lancaster University | **PhD Computer Science**
Lancaster, England **Oct 2018 – Jul 2023**

- **Thesis:** "*Analysing and Reducing Costs of Deep Learning Compiler Auto-tuning*"
  - Halved costs of DL compiler auto-tuning
- **GPU Cluster:** Deployed and maintained (for 4.5 years) an ML Research GPU cluster (150+ machines). Performed: hardware installation & upgrades, fixes, Kubernetes deployments, IAM and resource allocation to projects

Lancaster University | **BSc Computer Science**
Lancaster, England **Oct 2015 – Jul 2018**

- 1st Class (Honours) – avg. 90% across modules
- 🏆 Best Results Award (British Computer Society)
- 🏆 Outstanding Final Year Project Prize
- 🏆 Chancellor's Medal

## Research

- @ scholar.google.com/citations?user=gzeDWFIAAAAJ
- 9 papers, 180+ citations, H-index: 5
- IEEE TPDS, IEEE CLOUD, Springer ICA3PP, USENIX HotCloud, ACM CHI, ACM CSCW

## Other

- Freelance Web Dev Projects:
  - @ 3hgroup.co.uk, @ goldenmede.co.uk
- Languages: English & Polish (Bilingual)