

Guilherme Ilunga

Email: gilunga117@gmail.com

Website: gilunga.github.io

Experience

Amazon Development Centre Scotland

Applied Scientist II & I

May 2021 – Present

- Led ML initiatives in digital advertising that deliver \$300M+ annual revenue, specifically developing deep learning recommender systems for user interest, contextual category, and purchase prediction using PyTorch, Spark, LLMs, vector search (HNSW), and AWS at scale
- Led end-to-end experimentation strategy through large-scale A/B testing and established comprehensive monitoring systems and analytics dashboards to measure ML model performance impact
- Contributed to employee growth and development by mentoring multiple interns, publishing internal papers, and organizing internal workshops
- Adapted to evolving business needs by stepping into a managerial role for 6 months, leading two high-impact projects with a combined revenue exceeding \$200M and managing a team of 4 scientists

Microsoft Research Cambridge, UK

Research Software Engineer II & AI Resident

Sep. 2018 – May 2021

- Contributed to multiple computer vision initiatives using 2D/3D CNNs, including medical image segmentation, hand gesture classification, and holographic storage devices
- Engineered NLP and generative AI solutions including Transformer-based code completion, multimedia-aware smart replies, and GANs/VAEs for 3D mesh generation, using PyTorch and Azure
- Provided technical mentorship to AI Residents and interns across multiple ML domains

Publications

- Cheriére, N., Chu, J., Brennan, G., et. al. (2025). *Holographic Storage for the Cloud: advances and challenges*. ACM Transactions on Storage, 21(1).
- Barchiesi, D., Deshpande, A., Ilunga, G., et. al. (2025). *Delivering ad relevance without third-party cookies: Advanced AI-powered contextual techniques*. In Amazon Advertising Whitepaper Series.
- Barchiesi, D. and Ilunga, G. (2024). *Delivering ad relevance without third-party cookies: Advanced techniques for modelling audiences in anonymous traffic*. In Amazon Advertising Whitepaper Series.
- Ilunga, G. and Leitão, A. (2018). *Derivative-free Methods for Structural Optimization*. In Education and Research in Computer-Aided Architectural Design in Europe Conference (eCAADe).
- Caetano, I., Ilunga, G., Belém, C., et. al. (2018). *Case studies on the Integration of Algorithmic Design Processes in Traditional Design Workflows*. In International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA).

Education

Instituto Superior Técnico, University of Lisbon, Portugal

Master & Bachelor degrees in Computer Engineering

2013 – 2019