

# Robert Dargavel Smith

Machine Learning Engineer & Quantitative Analyst

*Authorized to work in the UK and EU*

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## Summary

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I am both a highly technical Individual Contributor and Manager, with many years of experience of building and leading teams and deploying models in production. I am passionate about sharing knowledge and collaboration, and by nature I am extremely persistent and driven by a need to understand how things work under the hood.

## Tech Stack

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Python - Hugging Face - PyTorch - TensorFlow - Docker - Git - Helm - Kubernetes - Terraform - Terragrunt - AWS (Lambda, EC2, SageMaker) - JavaScript - ReactJS - React Native - Selenium - Linux - C++ - C - Elasticsearch

## Professional Experience

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### Director Machine Learning Engineering, [Clarity AI](#)

London, UK 4/2022 - present

- Lead
  - Reporting to CTO, managing 10 people.
  - Lead successful hiring of 6 Data Scientists.
  - Leading all NLP projects (Information Extraction from PDFs, Controversies in news, Generative AI).
  - Created MLE team to bridge the gap with Engineering, focusing on tooling, implementation of best practices.
  - Gained trust of Engineering to manage cloud infrastructure thus increasing autonomy.
- Hands-on
  - [SageMaker Studio for Teams](#). Developed IaC and tooling to replace existing ML platform, leading to \$500K p.a. savings.
  - GitLab quality. Implemented pragmatic rules and automated monitoring to improve code quality with CI/CD.
  - Brand2Company. Developed methods to map brand names to company IDs.
  - Ethical web-scraping. Employed techniques to obtain data for POCs.
  - [Llama \(LoRA\)](#). Fine-tuned LLMs on specialized tasks.
  - Policy detection. Improved HITL process and fine-tuning of BERT models, trained to detect compliance with policies.
  - [OpenAI Proxy](#). Deployed API gateway for fine-grained monitoring / control of OpenAI usage by project.

### Head of Data Science, [IHS Markit](#) (now roughly one third of S&P Global)

London, UK 4/2020 - 4/2022

- Reported directly into Executive Vice President group CTO of IHS Markit (16,000 employees).
- Managed Centre of Excellence of 20 Data Scientists based in London, Gdansk and Bangalore.
- Collaborated with all business verticals (Financial Services, Automotive, Energy, Maritime & Trade).

### Managing Director, [Santander Group](#)

Madrid, Spain 1/2001 - 3/2020

- Several roles including Global Head of Quantitative Analysis and Head of CVA Desk.
- Built and led team of over 20 people from more than 10 nationalities based in Madrid, London & New York.
- Developed and deployed models in C++ and Python used to price, hedge and value the bank's derivative portfolios.
- Started and ran CVA Desk, responsible for managing several hundred million euros of P&L risk.
- Frequent speaker at industry conferences in Europe, USA & Asia.

### Quantitative Analyst, [ABN Amro](#)

London, UK 1995 - 1/2021

- Developed models in C for pricing, hedging and valuing equity derivatives and convertible bonds.

### Software Engineer, [Harlequin](#) (now Global Graphics)

Cambridge, UK 1993 - 1995

- Developed device drivers for commercial printing presses.

## Selected Projects

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- [Audio diffusion](#). Music generation, included in Hugging Face's [Diffusers](#) package.
- [Deej-AI](#). Playlist generation with a Deep Convolutional Neural Network trained on audio samples.
- [deej-ai.online-app](#). ReactJS / React Native app deployed with Kubernetes.
- [Lambda scraper](#). AWS Lambda functions as a proxy pool for web scraping.
- [LALAL.AI](#). Collaboration with a startup specializing in stemming audios with ML.

## Academic Experience

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Professor, [MBIT School](#)

Madrid, Spain 2020

Advanced Machine Learning Expert Programme, specializing in Deep Neural Networks and NLP.

Professor, [Universidad de Alcalá](#)

Madrid, Spain 2013 - 2020

Masters of Artificial Intelligence and Masters of Quantitative Finance.

## Publications

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**Landmarks in XVA: From Counterparty Risk to Funding Costs and Capital,** [Risk Books](#)

2016

Chapter on "Managing XVA in the Ring Fenced Bank".

**An Almost Exact Simulation Method for the Heston Model,** [Journal of Computational Finance](#)

2007

## Education

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**Advanced Machine Learning Expert Programme,** [MBIT School](#)

Madrid, Spain 2019

Awarded maximum grade and was invited to be a Professor in subsequent editions of the course.

**BA First Class Honors in Mathematics** [Pembroke College, University of Oxford](#)

Oxford, UK 1990-1993

Awarded Pembroke College prize for Mathematics.

## Fun facts

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- Actor in several theatre productions ([Talkin' Turkey Theare Company](#), [Carlton Theatre Group](#), [Honda Teatro](#)).
- Certified [Mindfulness](#) (MBCT) Instructor.
- Marathon runner ([PB 2:47](#) New York City, 2013).
- Ironman Finisher (Florianopolis, Brazil, 2011).
- DJ (club, radio, produced [12" single](#) featured on Gilles Peterson compilation).
- Bronze medalist in [World Rowing Junior Championships](#) (coxed four, 1990).

## Natural Languages

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• **English** [Native]

• **Spanish** [Bilingual]