

LUC Frachon

AI RESEARCH SCIENTIST / ENGINEER, PH.D.

London, UK

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Summary

I am a Machine Learning Research Scientist/Engineer. My latest position was at Synativ, an AI start-up specialising in computer vision, where I researched, developed, and deployed data-efficient models. The company had to let the entire team go due to a lack of funding, so I am looking for the next opportunity. I hold a Ph.D. in Machine Learning (Neural Architecture Search) from Heriot-Watt University and Master's degrees in Mechanical Engineering and Marketing. After years in automotive marketing and sales management roles, I had an epiphany and decided to transition to Machine Learning. I am motivated by intellectual challenges, learning from others, and disseminating the responsible use of AI for the well-being of humankind. I am authorised to work in the UK under the EU Pre-settlement scheme.

Experience

Synativ

London, UK

AI RESEARCH SCIENTIST

Jul. 2023 - Apr. 2024

- R&D: Researched and developed cutting-edge Computer Vision models for real-life applications, prioritising data efficiency.
- GIS: Foundation model for geospatial image segmentation achieved 0.90 mIoU with less than 50 labelled images.
- AgTech: Rock detection from drone imagery; self-supervised pretraining, fine-tuned on 700 labelled images. Despite the extreme class imbalance, the model achieved 0.75 AP@50 (1:10,000 positive:negative pixel ratio).
- AgTech: Weed vs crop segmentation model from drone imagery achieved 0.80 mIoU with 175 labelled images despite severe class imbalance.
- Deployment: Deployed models to our public SDK, including integration, testing, documentation, and tutorials.
- Strategy: Influenced decisions about target customers, product definition, and research projects.
- Customer-facing: Identified use cases, proposed technical solutions, onboarded them on the SDK.
- Communication: Boosted Synativ's visibility by creating blogs, technical demos, videos, documentation, and assets.

Stichill Capital

London, UK

INDEPENDENT AI AND DATA SCIENCE CONSULTANT

Apr. 2023 - Jun. 2023

- Researched AI and data technologies for Stichill Capital (investment fund) in the biomedical sector.
- Delivered technical due diligence on AI biotech platforms.

LyRise.ai

Cairo, Egypt

ML CONSULTANT

Jan. 2021 - Jun. 2023

- Tech: Boosted a customer's profit per account by 60% by developing a financial scoring system.
- Tech and projects: Led the development of ML systems from prototyping to deployable code.
- Customer-facing: Converted prospects into customers through meetings and pre-engagement proofs-of-concept.
- Team: Recruited and coordinated a top-tier talent team for a leading UK customer in the online advertisement space.
- Promotion: Successfully defended LyRise before the Google for Start-Ups Accelerator Africa 2022 selection committee.
- Fund-raising: Successfully co-developed and co-presented pitch deck, securing \$400k seed funding.
- After my move to London (08/2022), I became an AI Advisor to LyRise while refocusing on my Ph.D.

New Giza University, School of IT

Cairo, Egypt

ADJUNCT PROFESSOR

May 2021 - Mar. 2022

- Wrote a comprehensive Introduction to Data Science course from the ground up.
- Effectively taught the curriculum to second-year students.
- Received a renewal proposal from the university for the 22-23 academic year (unable to accept due to my relocation to the UK).

University of Aberdeen

Aberdeen, UK

GUEST LECTURER, MSc ARTIFICIAL INTELLIGENCE

Nov. 2018 - Jul. 2020

- Developed and presented lectures on Automated Machine Learning and Neural Architecture Search.
- Inspired two MSc students to specialise in these areas, and supervised their thesis work.

Freelance

Bucharest, Romania

ML AND DATA SCIENCE CONSULTANT

Mar. 2016 - Jul. 2017

- Provided consultancy services to local and international companies as part of my transition from general management to Machine Learning and Data Science (Edenred, KPMG, Inetum).
- Contributions include a financial predictive model that improved the F1-score by +10 points over baseline.
- Helped kick-start Orange Lab Romania's adoption of Deep Learning by lecturing 130 engineers.

JCB

Paris, France

AFTERMARKET DIRECTOR

Jan. 2013 - Aug. 2015

- Grew market penetration by 10% on parts, 100% on attachments through market strategy and resource re-deployment.
- Supervised the market side of an SAP transition, supporting customer satisfaction through it.

Ford Motor Company

SIX SPECIALIST AND MANAGER ROLES IN MARKETING & SALES

Paris, France and Brentwood, UK

Jan. 2001 - Dec. 2012

- Held six roles in Planning, Sales, and Marketing (France and the UK), from market analyst to product manager.
- Successfully launched three new vehicles, hitting sales targets within time and budget constraints.

Education

Heriot-Watt University

Edinburgh, UK

PHD IN MACHINE LEARNING (NEURAL ARCHITECTURE SEARCH)

- Efficient Neural Ensemble Search method using an autoencoder + performance predictor with grammar encoding of the search space.
- Secured a £12K NHS endowment for research into Computer Vision models applied to retinal scans of patients with diabetes.

HEC Paris Business School

Paris, France

MSc IN MARKETING

Ecole Centrale de Nantes

Nantes, France

MSc ("DIPLOME D'INGÉNIEUR") IN MECHANICAL ENGINEERING

Projects

Public portfolio, a selection of diverse personal projects in Computer Vision, NLP, Data Science, etc.

luc.frachon.github.io

Neural Architecture Search for Diabetic Retinopathy Detection, WIP - £12,000 NHS endowment.

[NHS Grampian / University of Aberdeen](#)

Skills

Coding Python, R, SQL, C++, \LaTeX , Markdown

ML/AI Transformers, CNNs, Diffusion, PyTorch, Lightning, ONNX, Numpy, Pandas, Scikit Learn, XGBoost, OpenCV, Optuna, Tableau

MLOps, DevOps Conda, Git, Github, AWS, SLURM, WandB, MLFlow

Soft skills Agile project management, written and verbal communication, customer engagement

Languages French (native), English (fully fluent), German (intermediate), Japanese & Italian (beginner)

Summer Schools & Other Courses

Lisbon Machine Learning School

Lisbon, Portugal

LARGE LANGUAGE MODELS, REINFORCEMENT LEARNING

Aug. 2020

PRAIRIE AI Summer School

Paris, France

ROBOTICS, SELF-SUPERVISED LEARNING, REINFORCEMENT LEARNING

Oct. 2019

Eastern European Machine Learning Summer School

Bucharest, Romania

DEEP REINFORCEMENT LEARNING, LARGE LANGUAGE MODELS, COMPUTER VISION

Jul. 2019

Online certificates

MOOC SPECIALISATIONS

2015 - 2022

- ML Engineering for Production (MLOps) - Deeplearning.ai
- Reinforcement Learning - University of Alberta
- Deep Learning - Deeplearning.ai
- Self-driving Car Engineer - Udacity
- Data Science - Johns Hopkins University

Publications, Articles, and Other Media

SCIENCE COMMUNICATION

Blog articles, explaining and implementing ML models from scratch (e.g., neural radiance field, diffusion).

[Medium](#)

Hosted the 2021 NeurIPS Egypt chapter, moderated a panel discussion with four AI experts.

[NeurIPS Egypt 2021](#)

Public engagement, advocating for more AI literacy among the general public.

[Science Week 2018](#)

Marketing articles and public documentation, showcasing the models I developed.

[Synativ](#)

Posts and videos, for educational and marketing purposes.

[LinkedIn](#)

ACADEMIC

Novel Approaches in Macro-level Neural Ensemble Architecture Search (PhD Thesis), L. Frachon,
Heriot-Watt University, School of Mathematics and Computer Science, 2024

Heriot-Watt University

An Immune-Inspired Approach to Macro-Level Neural Ensemble Search, L. Frachon, W. Pang, G. Coghill,
IEEE Congress on Evolutionary Computation 2021, Krakow, Poland. Oral presentation.

IEEE CEC 2021

ImmuNeCS: Neural Committee Search by an Artificial Immune System, L. Frachon, W. Pang, G. Coghill,
arXiv:1911.07729

arXiv 2019

Immune-Inspired Neural Architecture Search, L. Frachon, W. Pang, G. Coghill, Recent Advances in Artificial
Intelligence 2019, Bucharest, Romania. Poster session - Top 5 submission.

RAAI 2019