

# Guy Alexander Reading

## BSc (Hons), MSc

London, SE1 4NU  
guyreading@live.co.uk  
07983633260

[www.linkedin.com/in/guy-reading](https://www.linkedin.com/in/guy-reading)

[www.github.com/guyreading](https://www.github.com/guyreading)

[www.kaggle.com/guyar1/competitions](https://www.kaggle.com/guyar1/competitions)

### Summary

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A Data Scientist with 5+ years of experience specializing in Computer Vision and Reinforcement Learning. Strong background in mathematics and physics with extensive experience in training, testing, and deploying machine learning models. Proven track record in leading technical projects and implementing cutting-edge AI solutions to answer research questions for customers.

### Experience

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July 2022- PRESENT

#### Data Scientist, Faculty, London

- Technical Lead and Individual Contributor for a multi-million-pound RL research project that spanned multiple collaboration partners within Defence to discover and exploit specific game strategies. This work has shaped the discourse within government (Defence) regarding the extent they can use RL for taking specific strategies in games and has demonstrated and recommended specific techniques to achieve this.
- Technical Lead and Individual Contributor for a CV project involving multi-object tracking, specific target identification, re-identification and long-term tracking for a Defence customer. This work helped the government re-assess the feasibility for rolling out this technology fully, changing their target from 2030 to 2026.
- I am established as a CV & RL subject matter expert. I'm a main technical contributor within Faculty Defence BU for bid writing on RL/CV tenders (technical vision & planning) to win new contracts and have helped win >£1M in new contracts.
- Fine-tuned and trained from scratch YOLO models (CV), Llama models (NLP) and PPO models (RL). I used multiple cloud components to do this (AWS EC2, S3).

NOVEMBER 2020 – July 2022

#### Data Science and Machine Learning Research Engineer, Raytheon, Gloucester

- Technical Lead for the team within Raytheon to compete in the [CAGE Challenge](#), where we achieved 2<sup>nd</sup> place. Led the development of Hierarchical PPOs agent to achieve this.
- Developed/trained/mentored training of Reinforcement Learning models, including PPO, A2C, Rainbow DQN, using many different frameworks. This also included reward shaping, building tools to verify model training, using tensorboard/other visualisations.
- Applied GANs to computer generated images to make them more realistic.
- Used XAI techniques including SHAP and MACest to understand the models we created.
- Applied image process & graph ML techniques to graph road networks.
- Mentored MSc Data Science students on Raytheon industrial placement projects.

JUNE 2018 – APRIL 2020

#### Informatics Scientist, Ilika, Southampton

Built a multitude of software tools in MATLAB to help the research scientists interpret their data. This includes:

- Machine learning models, looking for patterns between manufacturing data and quality data to optimize the manufacturing process. I worked with many different data formats, including JSON and XML, and built SQL databases and worked with MongoDB.
- Automating parts of QA for the manufacturing process, notably, I developed a lump detector (finding lumps in pictures of thin films) to automate QA of Ilika's screen printing processes. This was done using transfer learning on a pre-trained semantic segmentation model, Deeplab-V3+.
- Tools for: Image processing, data processing (automatic background subtraction in charts for Raman & XRD equipment data), to analyse/visualise battery data and tools to simulate/model different battery architectures using COMSOL.
- Statistical/Design of Experiments tools for optimal experiment design & analyzing results.

JANUARY 2017 – FEBRUARY 2018

**CTO, NeevesTECH, Glasgow (Start-up working with founder)**

- Built the company website and managed marketing, including organising & representing at marketing events (Vacuum Expo).
- Implemented wireless communications software for our products.
- Managed and printed 3D printed mechanical models/prototypes.

SEPTEMBER 2015 – JANUARY 2017

**Development Engineer, Teledyne e2v, Chelmsford**

- Continued with my responsibilities taken on during my time as a Graduate Engineer.
- Developed automated data processing for my equipment using excel & VBA.
- Built statistical process control (SPC) tools using VBA to automate chart updating within the department.

SEPTEMBER 2013 – SEPTEMBER 2015

**Graduate Engineer/Teledyne e2v, Chelmsford**

- Became owner of two core pieces of equipment: 1. Quantum Efficiency measurement equipment and 2. Reflectivity measurement equipment. Responsible for equipment maintenance, measurement, analysis & reporting.

## **Education**

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Merit in MSc in Nanoelectronics and Nanomechanics from University of Leeds and University of Sheffield, preceded by BSc in Nanotechnology from University of Leeds.

## **Awards/Qualifications**

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AWS Certified Developer Associate • APM Project Management Fundamentals • Six Sigma Yellow Belt • Machine Learning -Harvard University Online • Deep Learning Specialization - DeepLearning.ai • IET Present Around the World Essex Local Network Runner-Up 2014