

Guy Alexander Reading

BSc (Hons), MSc

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Summary

A Data Scientist with a background in small scale Physics and semiconductor manufacturing, with 5+ years of experience. I have extended experience with Reinforcement Learning (RL) and Computer Vision (CV) tasks. I am a curious self-starter keen to build things.

Experience

July 2022- PRESENT

Data Scientist, Faculty, London

- Co-led a multi-million-pound low-TRL RL research project that spanned multiple collaboration partners within Defence to discover and exploit specific game strategies.
- Led & delivered a CV project involving multi-object tracking, specific target identification, re-identification and long-term tracking for a Defence customer.
- Established as RL & CV subject matter expert & main technical contributor within Faculty Defence BU for technical vision & planning on RL/CV bids to win new contracts.

NOVEMBER 2020 – July 2022

Data Science and Machine Learning Research Engineer, Raytheon, Gloucester

- Led the team within Raytheon to compete in the [CAGE Challenge](#). Led the development of a Hierarchical PPO agent and novel observation transformations to do 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 techniques then graph techniques to graph road networks.
- All projects written in Python and we tended to use: Docker, WSL, Github, DVC, AWS (Sagemaker or Cloud9/EC2, S3).
- 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 (experiment design & analyzing results: think JMP).

JANUARY 2017 – FEBRUARY 2018

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

- Built the company website.
- Implemented wireless communications protocols for our products.
- Managed and printed 3D printed mechanical models/prototypes.
- Organized & represented at marketing events (Vacuum Expo).

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

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

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