

Guy Alexander Reading

BSc (Hons), MSc

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Summary

A highly driven individual at the intersection of Data Science & Small-Scale Physics, with 6+ years of experience working with software in various commercial engineering environments and roles, using Python, MATLAB & VBA. A proven track record in delivering on difficult and open-ended development/research projects. Experience in a wide variety of Engineering roles, including machine learning, optics characterisation, data engineering & storage (SQL), as well as multi-disciplinary tasks (optics, vacuum, electronics & software).

Experience

NOVEMBER 2020 - PRESENT

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 Concept Network 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.
- Applied image process techniques then graph techniques to graph road networks.
- All projects were in python and we tended to use: Docker, WSL (& so linux CLI), github, DVC, AWS (sagemaker or cloud9/EC2, S3 buckets).
- 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:

- Statistical/Design of Experiments tools (experiment design & analyzing results: think JMP)
- Tools for: Image processing (from simple pixel brightness binarization to object recognition, using transfer learning with DeepLabV3+ CNN to undertake semantic segmentation on images), 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.
- Data pipelines & implementation of various machine learning models to analyse manufacturing process using manufacturing data, bypassing Characterisation/Verification equipment.
- I also took on the role of in-house Machine Learning specialist, 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.

JANUARY 2017 – FEBRUARY 2018

Principle Project Engineer/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 analysis of measurements 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

- Assisted in optics characterisation of Teledyne e2v's image sensors, later taking on responsibility for reflectivity measurement equipment
- Owner of the Quantum efficiency measurement equipment and was responsible for measurement, analysis & reporting
- Completed placements in Marketing and Characterisation (a separate department)

Education

Sept 11-Sept 12	Graduated with a Merit in MSc in Nanoelectronics and Nanomechanics from University of Leeds and University of Sheffield.
Sept 08- Sept 11	BSc in Nanotechnology from University of Leeds
Sept 09-Sept 11	4 GCE A2 levels: Physics, Mathematics, Chemistry and Psychology. 5 GCE AS levels: the above A2's and General Studies
Sept 04-Sept 09	12 GCSE levels including: Mathematics, Chemistry, Physics and Biology

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