Robin Cole PhD

Nationality: British
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Data Scientist with Cambridge PhD with a passion for solving problems using data and python. A lifelong learner, I am continually broadening my skillset and happy to cross disciplines. Not afraid to roll up my sleeves and get stuck into the engineering details, I will do what it takes to get my models into production. Big believer in the importance of collaboration and the value of building a community. Active contributor to open source with a particular passion for machine & deep learning applications. Maintainer of the satellite-image-deep-learning repository with 5.5k stars & associated newsletter with 1.6k subscribers

WORK

Nov 2022 - present **Founder, Deep Field insights**

- Consultancy services on deep learning applied to satellite & aerial imagery
- Leveraging reputation gained with well known satellite-image-deep-learning repository & newsletter
- Revenue generated from 1-2-1 calls & sponsorship of the repository & newsletter

Jan 2021 – Oct 2022 **Senior data scientist, Satellite Vu**

- First technical hire, working directly with the CTO at this foundational stage of the business
- Built the first generation data engineering pipeline on AWS comprising AWS lambda, batch & S3
- Developed machine & deep learning solutions for applications such as fire spread prediction & cloud detection
- Worked on range of challenges including CNN classifiers, object detection, segmentation & multimodal image registration
- Data science chapter lead and involved in hiring for our data science positions & building out the supporting infrastructure
- Worked with the product & sales teams to provide proof-of-concept solutions & determine viable products for nascent technology
- Training and deployment of machine learning models on AWS Sagemaker
- Developed web UI for models using the Streamlit framework

Feb 2020 – Dec 2020 **Data engineer, notonthehighstreet.com**

- Developer on the data engineering platform for a website with millions of users
- Daily maintenance on the reporting & dashboard system used by the sales teams
- Daily tasks include writing Airflow pipelines, supporting analysts in the use of the Snowflake big data warehouse
- Optimisation or pipeline performance & SQL queries
- Collaborated with data scientists on improvements to the product recommendation engine & put their solution into production
- Participated in code reviews, daily standups, and agile methodology

Apr 2019 – Feb 2020 **Research and development, BlockDox (prop tech startup)**

- As this was a start up I was involved in almost all aspects of the business, from undertaking R&D on the core product, performing data science work, managing relationships with suppliers, representing the company at trade events, helping define the company strategy and roadmap, and interviewing candidates for new roles.
- Refinement and deployment on edge IOT devices of computer vision algorithm for anonymised people tracking using thermal cameras
- Modelling of time series data using Pandas

Jul 2017 – Mar 2019 **Optical systems engineer, Surrey Satellite Technology Ltd**

- Project management on a critical aspect of a satellite build
- Coordinated and participated in R&D program in collaboration with Oxford University to automate the alignment of space telescopes. The solution significantly sped up the manufacture of telescopes and de-risked the process
- Worked with software team to develop a geospatial cataloguing application with deep learning tagging of images using CNN classifier

Sep 2014 – Jul 2017 **Medical physics, Royal Surrey County Hospital**

- Three year training program specialising in radiotherapy physics
- Prototyped automated solutions to routine clinical work using computer vision
- Masters thesis research performing statistical comparison of two Monte-Carlo dose calculation algorithms

Aug 2011 – Aug 2014 **Postdoctoral Research Associate, University of Queensland, Australia**

- Research into the use of graphene nanotechnology to enable ultra precise interferometric measurements of motion
- Computational modelling of nanoscale systems to validate measurement results
- Support and mentoring of junior researchers

May 2010 – Jul 2011 **Research scientist, Sharp Laboratories, Oxford**

- R&D role researching novel uses for blue laser diodes, resulting in patented technology for sterilising water using UV radiation
- Finite element modelling of optical waveguides

EDUCATION

2006 – 2010 **PhD Physics, University of Cambridge**

- Research into the optical properties of nanoscale metal structures which enabled highly sensitive measurements of molecules
- Published multiple high impact papers including in Nano Letters and Physical Review Letters
- Automated a robotic measurement system & performed computational modelling of nanoscale optical fields

2014 – 2017 **MSc Medical Physics, Kings College London**

2004 – 2005 **MSc Optics and Photonics, Imperial College London**

2001 – 2004 **BSc Physics (1st Class), University of Southampton**

OPEN SOURCE AND COMMUNITY WORK

- Active on Github with over 8.3k stars on my repositories on Github
- Maintainer of the satellite-image-deep-learning repository with 5.5k stars. This has become a significant resource within this domain and I have established a reputation as an expert on this topic
- Maintainer of fire-detection-from-images which is a knowledge repository on the topic of fire detection with computer vision, has received 230 stars and is in use at a startup
- Invited speaker at PyData London events, with presentations on air quality monitoring and smart homes
- Have appeared on several podcasts including the ZenML and Mapscaping podcasts, the impact of which was substantial inbound leads for the sales team
- Proficient in: python, numpy, pandas, scikit-learn, scikit-image, pytorch, openCV, boto3

REFERENCES

Available upon request