Reed Roberts

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Programming Skills

- **Languages**: C++, Python, SQL **Technologies**: AWS, Kafka, PostgreSQL

Experience

- **Cirdan Capital** London, England
  Senior Quant Developer *2021 - Present*
  - **Cloud Infrastructure**: Introduced and implemented CNN technologies like YOLO for vehicle type and vehicle colour classification. Created data pipelines using the COCO API, DVLA databases, and our own internal API to quickly create, test, deploy, and iterate new classifiers. Experience with pyTorch and Darknet frameworks.
  - **Leadership**: Optimized novel high-performance OCR algorithms for ANPR. Implemented optical flow to measure and quantify traffic density. Familiarity with tracking algorithms, color theory, and image encoding as well as in-depth knowledge of optical physics. Heavy-use of OpenCV in both C++ and Python.
  - **Core Process Automation**: Lead the company's research and development to keep up-to-date with cutting edge machine learning and computer vision technology. Self-directed data collection, analysis and development of novel algorithms.
  - **Reasearch and Development**: Designed and engineered new software products from the ground up from research to sale. Wrote enterprise level code in C++ and Python.
  - **BAU**: Experience leading on the ground and making strategic and tactical decisions. Experience dynamically and calmly managing disasters, including rapid network patching, deploying hotfixes, and trading to limit exposure in realtime.
- **4Sight Imaging** Manchester, England
  Software Engineer *2017 - 2021*
  - **Machine Learning**: Introduced and implemented CNN technologies like YOLO for vehicle type and vehicle colour classification. Created data pipelines using the COCO API, DVLA databases, and our own internal API to quickly create, test, deploy, and iterate new classifiers. Experience with pyTorch and Darknet frameworks.
  - **Computer Vision**: Optimized novel high-performance OCR algorithms for ANPR. Implemented optical flow to measure and quantify traffic density. Familiarity with tracking algorithms, color theory, and image encoding as well as in-depth knowledge of optical physics. Heavy-use of OpenCV in both C++ and Python.
  - **Self-directed Research**: Lead the company's research and development to keep up-to-date with cutting edge machine learning and computer vision technology. Self-directed data collection, analysis and development of novel algorithms.
  - **Product Development**: Designed and engineered new software products from the ground up from research to sale.
  - **Core Development Methodology**: Experience including OOP, design patterns, systems design, databases, version control, DevOps and agile methodology. Language work predominantly C++.
- **Oxford Department of Plant Sciences** Oxford, England
  Internship - Computational Biology *Summer 2015*
  - **Software Project**: Developed a program named OrthoFiller. This project dealt with developing software for the bioinformatics community. This internship provided valuable experience with bioinformatics, the Python and software projects in an academic setting.
- **Petrotel** Dallas, USA
  Internship - Cloud Migration *Summer 2013*
  - **Web Design**: Assisted the company in its transition to Google Cloud Services.

Education

- **University of Manchester** Manchester, England
  BSc. Physics With Honours; Specialized in computational physics *2014 – 2017*
  - **Relevant Courses**: Computing and Data Analysis, 1st; Programming for Physicists, 1st; Computational Physics, 2:1; Object Oriented Programming, 1st; Lab Work (All Years), 1st
- **ACS International School** Surrey, England
  International Baccalaureate; Higher: Math, Physics, Chemistry; Lower: English, History, Japanese *2012 – 2013*

Personal

- **University of Manchester Gaming Society** Manchester, England
  President *2015 - 2017*
  - **Leadership**: Lead and grew one of the largest student societies at the University of Manchester with over 300 active members. Managed a team of 10 volunteers to organize weekly events. Under my management we secured financing and sponsorship, and organized events with over one thousand students in attendance.
- **Interests**: Astrophotography, Dungeons and Dragons, Cycling, Cooking

Projects

- **Electronic Simulation**: Designed a C++ program for the efficient simulation of complicated AC circuits.
- **Data Analysis**: Assisted in writing software in Python and Matlab to quickly perform chi-squared analysis of a dataset for the University of Manchester Physics Department.