Mr Aaron Peter Dougherty

14 Shakespeare Road, St Neots, Cambridgeshire, PE19 8HG

07730005916 • [aaron.dougherty95@gmail.com](mailto:aaron.dougherty95@gmail.com) • [LinkedIn Profile](https://www.linkedin.com/in/aaron-dougherty/) • British (UK resident since birth)

I am looking to take on my next challenge in the technology sector. I hope to continue to build on my development, problem solving and data skills and gain more experience in designing, building and implementing the latest technologies to tackle real-world problems and deliver impactful change. I am passionate about solving interesting and challenging problems through code and learning to use new technologies, and I have professional experience working across a number of Agile SDLCs. Further, I would relish the opportunity to experiment with unfamiliar programming languages.

Most recently, I worked as a Quantitative Developer for OpenGamma, implementing financial models and data processing pipelines to reduce margin payments for buy side clients. Previously, I worked in data-focused engineering positions in machine learning engineering and research and data engineering, with a particular focus and interest in deep learning, machine vision and NLP; with some Bayesian Inference and probabilistic modelling. This includes working with a broad variety of cross-functional teams in both small startups and large established corporations. Further, I have Product Management experience in the MedTech space.

**Technical Toolbox**

**Languages:** Java, Python, SQL and some exposure to Golang

**Frameworks and Libraries:** TensorFlow, Keras, PyTorch, NumPy, Scikit-Learn, Pandas, Matplotlib, SciPy, NLTK, Gensim, & more

**Tools:** Various IDEs, text editors and terminal clients, Docker, AWS, PostgreSQL, MSOffice, Jupyter, Maven, Spring Boot & more

**Operating Systems:** MacOS, Windows, Linux (CentOS and Ubuntu)

**Source Control:** Git, GitHub (and GitHub Actions), GitLab, DVC

**Other:** Confluence, Jira

**Experience**

**OpenGamma |** *Quantitative Developer*  ***(Aug 2022 – Nov 2023)***

Developing and implementing financial models and surrounding infrastructure and data engineering to price derivatives and calculate margin from financial portfolios.

* Designed, developed, (unit and integration) tested and released code to implement new features, working in one and two week sprints using agile Kanban and Scrum inspired methodologies
* Implemented derivative risk calculation and pricing models across a broad range of asset types
* Designed and developed market data creation, storage and loading systems, largely on AWS,
* implementing and adding additional functionality to margin calculation models and workflows
* Worked across a large and complex code base on GitHub, taking ownership of development projects from conception and scoping, through to implementation, testing and release
* Investigated and resolved support tickets
* Supported new feature and products releases to clients

**CMR Surgical |** *Product Manager - Digital Education* ***(Oct 2021 – Jul 2022)***

Developing data-driven solutions to improve the training of medical professionals in using the Versius surgical robot.

* Designed and implemented feature request, requirements engineering, prioritisation and Agile development process for curriculum and educational software development
* Communicated complex technical and medical concepts to technical and medical teams and clients.
* Reduced development time from two years to three months
* Designed and implemented testing and launch protocol for educational software including wider Launch and Post-launch procedures
* Identified data ingestion points and introduced customer, business, and SME feedback loops into the design and development process.
* Analysed data and collected customer feedback to prioritise curriculum and educational software and hardware development.
* Lead end-to-end development cycles for curriculum and edtech software development
* Determined vision, roadmap and user stories for future curriculum and educational software and hardware development within Professional Education.
* Identified and managed stakeholders during curriculum and educational software and hardware development

**Code Worldwide/RAPP |** *Machine Learning Engineer and Data Scientist* ***(Jun 2021 – Oct 2021)***

Translated business problems into mathematical and data frameworks; architected databases and data pipelines, automating data preprocessing; built, tested and deployed models and data solutions to deliver value to clients and allow them improve data utilisation.

* Developed deep learning recommendation system to identify ideal clients for upcoming auctions and select which products to market to them - improving recommendations by 20%
* Utilised Object Oriented principles to engineer model deployment and monitoring to package and deliver the model to our client (Machine Learning Productionisation)
* Identified clients’ objectives and translated these into OKRs and selected relevant KPIs
* Liaised with internal teams, gathered and delivered analysis requirements
* Hands-on modelling using Python and SQL to query data and produce statistical analysis
* Interpreted data and explained the results of the analysis to a non-technical audience
* Documented analytical work undertaken for clients
* Liaised with Data Strategists to help turn the analysis into actionable insights to aid marketing campaigns

**Cyted Ltd |** *Machine Learning Engineer and Product Manager*  ***(Apr 2020 – Jun 2021)***

Architected and engineered ML and AI tools for assisting in computational histopathology diagnostics. Defined Cyted’s product development strategy to meet key business aims. Made data-driven product design decisions and managed the end-to-end production of Machine Learning products and features.

* Researched and built end-to-end software and web-based human-in-the-loop, Machine Learning and AI solutions for pathology (Detected IM and GI Epithelium with >98% accuracy)
* Engineered semi-automated image labelling software to enhance dataset quality and speed up data labelling.
* Explored Probabilistic modelling and Bayesian principles for cancer and precancerous cell prediction uncertainty.
* Utilised Object-Oriented and Functional programming principles to productionise machine learning models and workflows and engineer supporting solutions for data storage, transfer and processing (e.g. ETL pipelines)
* Engineered scalable, end-to-end Machine Learning pipelines over distributed cloud networks
* Implemented automated, containerised data preprocessing and model training on AWS
* Developed ML and AI Product and Project plans, market and product strategy, requirements documentation and defined SDLC procedures
* Managed ML and AI development and research projects, determining and implementing Cyted’s DevOps and version control practices (including automated unit and integration testing)
* Ensured the company complies with Data Protection and ISO medical device accreditation standards during development

**Vodafone |** *Graduate Data Engineer* ***(Sept 2019 – Mar 2020)***

Six-month graduate placement as a Data Engineer within Vodafone Business IT Enterprise Architecture

* Architected secure, fault tolerant, cloud-based data systems on AWS
* Designed and implemented ETL pipelines involving data integration and transformation (structured and unstructured data) and data normalisation
* Designed and implemented relational and analytical databases; data warehouses and data lakes; star/snowflake schema data models
* Developed Big Data analytical platforms, frameworks and pipelines in distributed cloud environments (AWS), within a multidisciplinary team of Engineers, Developers and Architects for analytical, statistical and machine learning use cases
* Implemented Agile practices, including sprint planning, and gained experience with Scrum methodology.

**Education**

**University of Birmingham |** *MSc Computer Science – Distinction*  ***(2018 – 2019)***

*Literature* Review: Application of SVM models in AML practices to detect suspicious transactions and behaviours

*Dissertation*: Using natural language processing of general world news and deep learning to predict stock price fluctuations

*Modules:* Software Workshop (OOP with Java); Databases (SQL and Relational data modelling); Data Structures and Algorithms; Artificial Intelligence; Machine Learning; Human-Computer Interaction; Operating Systems and Networks; Software Engineering.

**University of York *(2013 – 2016)***

*BSc Psychology – Upper-Second Class Honours (2:1)*

*Literature* Review: Use of Brain Machine Interfaces in neurological rehabilitation and restoring independence

*Dissertation*: Perception of untrustworthiness in actions and its relationship with emotive action perception