Jeremy Minton

Phone: +447512859328
Email: jeremyminton@pm.me
Nationality: New Zealand; British

www.jeremy.minton.nz
www.linkedin.com/in/jeremyminton

October 2023
London
United Kingdom

RECENT EMPLOYMENT

Feb 2023 – Sep 2023	Hadal Labs, **Co-Founder and ML Consultant**: Developed a prototype information extraction pipeline for employment agreements to pitch a six-month project to clients in the employer of record industry; worked with the client to develop a project scope and set terms of the project.
Nov 2022 – Jan 2023	Genei.io, **Contracting Machine Learning Engineer**: Took multiple models through to production on serverless GPU instances - including organising data labelling for model validation.
Aug 2021 – Sep 2022	Iris.ai, **Lead Research Engineer**: Established a research road map including publications and productisation; ran fortnightly planning sessions with each team; coordinated with the back-end for productionisation of the models.
June 2020 – Sep 2022	Iris.ai, **Senior Research Engineer**: Implemented information extraction into a knowledge base; built confidence prediction models for the extraction pipeline; researched Riemmanian word-embedding spaces, work that was presented at SciNLP; productionised a multi-document summarization model and improved research processes with docker and MLFlow.
Feb 2019 – June 2020	Eigen Technologies, **Senior Research Scientist**: Architected and developed a machine learning pipeline; built models for document classification, information extraction and text clustering; implemented model evaluation; and improved research processes and tooling.
Feb 2018 – Feb 2019	Eigen Technologies, **Solutions Scientist**: Developed document classification algorithms in an information extraction pipeline for unstructured text; improved CI/CD to AWS with docker; prototyped GUI tools for faster delivery; and client management.

SKILLS PROFILE

Machine learning:

- During my six years of experience in natural language processing, I have solved problems including OCR and document layout, information extraction, document classification/clustering and summarisation. I have utilised models such as custom cython embeddings, Gensim embeddings, Spacy features, Huggingface transformers, generative LLMs.

- I have experience with Tensorflow and Pytorch; for example, upgrading an academic implementation of a recurrent encoder-decoder neural network with attention to Tensorflow 2. This required the implementation of a number of custom layers and initializers.

- I leveraged my knowledge of Bayesian modelling to quantify uncertainty in model and architecture evaluation in a low data setting. This was used to report bounded model performance to clients, as well as improving our hyper-parameter optimisation.

- I have often been able to apply knowledge of other algorithms, such as my background in operations research, to avoid or complement the use of machine learning. For example, I used an integer programming solution to assign extracted entities into an ontology. This maximised the total probability predicted by ML classifiers while avoiding conflicting assignments and other constraints.

MLOps and Software Engineering:

- Working in smaller teams has meant that I have I have gained dev-ops experience in all my roles to date. I have worked with both AWS and Azure; deployed on bare metal, with docker and docker-compose, and prototyped solutions with kubernetes; managed project environments with virtual environments, conda and poetry; and setup continuous integration and automatic deployment from Git with TeamCity, Jenkins and Github/Gitlab pipelines.

- With over ten years of research and commercial programming experience, I am most proficient with Python, but also have experience with Javascript, Matlab, Julia, Java, GoLang and C++. My key expertise is with algorithm implementation, machine learning and the supporting technologies such as workflow orchestrators; web frameworks; and relational, vector and schema-less databases.

- With self-taught web development, I managed websites as webmaster for four Cambridge University societies. This included PHP, Jekyll, Wordpress and Weebly websites. As side projects, I have also developed applications using Django (Python), Wt (C++), node.js and Flutter frameworks. I am currently working on some hardware projects with Rust.

Communication and Leadership:

- Following a period of delivery focused fire-fighting I started the Research Lead position at Iris.ai by defining a research road-map that refocused the team to our research objectives. In the following year, the team built evaluation frameworks to quantify performance improvements of model updates to our products and developed a healthy publication pipeline with three publications and two more in preparation.

- Starting at Eigen Technologies, I gained experience with client facing work including pitching, presenting pilot results and building closer collaborations for deployment and integration of software. This set me up for conducting the entire sales process for a six month project with Hadal Labs.

- At Eigen Technologies, I improved R&D processes by introducing environment management and dependency control with Conda, Poetry and semantic versioning of the in-house developed library; I introduced project templating using the cookiecutter package; and improved experimental and benchmarking infrastructure with tools like Docker, MLFlow, Dagster and Pachyderm on kubernetes. A setup I repeated at Iris.ai.

- I've had multiple teaching roles, including Code First Girls from 2019 to 2021, undergraduate teaching from 2010 to 2017 and coaching both children and adults in martial arts.

QUALIFICATIONS

2013 – 2017	University of Cambridge (UK), **PhD** in Applied Mathematics; **Rutherford Foundation PhD Scholarship** (full scholarship) awarded in 2011: Developed mathematical models for control systems of manufacturing processes. Implemented solutions in Matlab and Python and scripted simulations in ABAQUS for model validation.
2008 – 2011	University of Auckland (NZ), **B.Eng(Hons)** with **First Class Honours**; Specialising in Engineering Science; GPA 8.6 (max 9.0); **The University of Auckland Scholarship** (full scholarship) awarded in 2008; **Deans Honour's List** and **Senior Prize** in Engineering Science Year 2 and 3.

SELECTED OTHER PROJECTS

Jul 2016 – Oct 2016	Cambridge Consultants Ltd., **Software Engineering Intern**: Data analysis and simulation to develop a smart home heating system. Integration into a node.js based system.
Jan 2013 – Apr 2013, Dec 2010 – Feb 2011	New Zealand Defence Technology Agency, **Research Engineer (Internship)**: Analysed the performance of Java and Matlab clustering algorithms for radar identification. This involved signal feature extraction and implementation testing in Java and Octave.
Mar 2011 – Sep 2011, Early 2012	University of Auckland, **Final Year Project**: Analysed the performance of a selection of non-linear, derivative free optimisation algorithms for reservoir management. This involved implementing several algorithms in Matlab and running large simulation sets over many computers. This work was published in SIURO.

SELECTED PUBLICATIONS

Hoelscher-Obermaier, J.; (5 authors); Minton, J. Leveraging knowledge graphs to update scientific word embeddings using latent semantic imputation. *Proceedings of the first Workshop on Information Extraction from Scientific Publications*, 43-53, 2022.

Gongolidis, M.; Minton, J.; (4 authors) Domain-adaptation of spherical embeddings. *SciNLP 2021 poster abstract*, 2021.

Minton, J.; Brambley, E. Meta-Analysis of Curvature Trends in Asymmetric Rolling *Procedia Engineering*, 207:1355-1360, 2017.

For a full list of publications, please see https://www.researchgate.net/profile/Jeremy-Minton