

Michael Hodgins

London, SW13 0LA • michaelhodgins@live.co.uk • +447552727092 • [LinkedIn](#) • [GitHub](#) • [GitLab](#)

Education

Imperial College London

London, UK

Master of Science: Computing (Artificial Intelligence and Machine Learning)

2024 - 2025

- *Dissertation:* Using GNNs and LLMs to Efficiently Generate a Fact Database (IAEA Partnership).
- *ML Techniques:* VAE, GAN, Diffusion, Transformers, RNN, GNN, GCN, GMM-EM, RL and more.
- Developed generative GNNs to upsample low-resolution brain graphs into high-resolution graphs.

McGill University

Montreal, Canada

Bachelor of Science: Physics Major, Computer Science Minor, Music Technology Minor

2019 - 2023

- *CGPA:* 3.95/4.00 - Graduated with Distinction (top 25% of students in faculty).
- *Awards:* 2023 T I Gurman Prize in Physics (awarded to one student), 2022 Wing Hing Chan Scholar and Dean's Honour List (top 10% of students in faculty) for 2 years.

Projects

HTML fact-extraction: International Atomic Energy Agency & Imperial College London | Pytorch, GNNs, HuggingFace

- Researched and designed a pipeline combining BERT-based models and graph transformers to model HTML node relationships for the IAEA.
- Outperformed state-of-the-art GraphScholarBERT by raising F1 score from 0.75 to 0.85 on the movie section of the SWDE dataset, enabling efficient extraction of facts from webpages.

Alert system: Flagging Acute Kidney Injury (AKI) for NHS ER | Docker, Kubernetes, Python, NNs, Git

- Collaborated in a team of 4 to build a Docker/Kubernetes-based real-time AKI alerting system, cutting ER diagnosis times from minutes to under a second.
- Increased predictive performance by improving on the NHS' 73% accuracy baseline to 95%.
- Defined product requirements, balanced technical feasibility with healthcare impact, and ensured seamless integration in preparation for hospital deployment.

Experience

Greenback Recycling Technologies

London, UK

Full Stack Developer | Azure, Azure DevOps, Selenium, xUnit, Gherkin, C#, JS, Grafana, HTML/CSS *August 2023 - August 2024*

- Worked within an Agile SCRUM team developing the e2V Circularity Platform in .NET.
- Collaborated with the CEO on an independent project to create a blockchain demo of our product for business partners and clients.
- Improved product reliability by leading testing efforts, implementing 350+ automated UI tests (BDD with Selenium, xUnit, Gherkin) that cut production bugs by 80%.
- Led the data visualisation team to integrate Grafana, producing 5+ client friendly dashboards.

McGill University

Montreal, Canada

Mammography Undergraduate Researcher | Python, EGSnrc, Linux, Git

September 2022 - December 2022

- Virtually reconstructed PMMA cubes from mammography scans within the EGSnrc software.
- Ran over 300 mammography simulations on the virtual objects using EGScbct.
- Applied a scatter correction algorithm to reduce the contrast-to-noise ratio of a scan by 13%.

Ginger Scooters

London, UK

Data Analyst Internship | Python, Excel

June 2022 - August 2022

- Analysed 30,000+ trips, producing usage reports and financial charts for senior stakeholders.
- Developed a scooter placement model, reducing idle scooter time by 9% during peak hours.
- Collaborated with local government officials and businesses to launch the UK's first e-scooter trial, gaining 7,000+ registered users within the first three months.

Skills

SoftwareWeb Development: Design patterns and principles, Python, Docker, Kubernetes, JavaScript, Git, Linux, Azure, Selenium, xUnit, Gherkin, C#, HTML/CSS.

Data Science: Bayesian statistics, MCMC, Decision Trees, Regression, Clustering, Grafana.

Python Libraries: PyTorch, Scikit-learn, Numpy, Matplotlib, Pandas, emcee.

Interests: Recreational skydiving, [Holiday vlogger](#), RYA Day Skipper Licence, Piano prodigy (self-proclaimed).