Michael Hodgins

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

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).