

Mathis Weil

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SUMMARY

Data Science & Machine Learning postgraduate (UCL) with First-Class BSc in Computer Science (QMUL). Experience building AI-driven search systems, scalable data pipelines, and automated data collection using Python, SQL, and ML frameworks (PyTorch, scikit-learn). Strong communicator and educator (UCL/QMUL teaching roles). Eager to apply modelling and analytics to commercial problems across pricing, promotions, marketing, ranging, availability, and new store decisions.

EDUCATION

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| University College London (UCL)
<i>MSc Data Science & Machine Learning</i> | London, UK
<i>Sep. 2025 – Present</i> |
| • Modules: Bayesian Deep Learning, Digital Finance, Statistical NLP, Information Retrieval & Data Mining, Multi-Agent AI | |
| Queen Mary University of London (QMUL)
<i>BSc Computer Science — First Class Honours (83%)</i> | London, UK
<i>Sep. 2022 – Jul. 2025</i> |
| • Dissertation: AI semantic search engine (Sentence-BERT, PostgreSQL + pgvector, FastAPI) achieving Recall@20 = 0.899 and MRR = 0.843 | |

EXPERIENCE

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| Postgraduate Teaching Assistant
<i>University College London</i> | <i>Sep. 2025 – Present</i>
London, UK |
| • Lead practicals and assess coursework across Introductory Programming, Computer Architecture & Operating Systems, and Software Engineering | |
| • Provide structured feedback and guidance to 150+ MSc students, strengthening communication of complex technical concepts to non-experts | |
| Computer Science Lab Demonstrator
<i>Queen Mary University of London</i> | <i>Sep. 2024 – May 2025</i>
London, UK |
| • Supported labs for 400+ students; designed coursework integrating Information Retrieval and ML in databases to emphasise data-driven decision-making | |
| • Awarded Demonstrator of the Year for student support and impact on learning outcomes | |
| Software Engineer
<i>Groupe Prunay</i> | <i>Jul. 2024 – Aug. 2024</i>
Paris, France |
| • Built software tools to streamline insurance workflows; authored technical documentation to improve maintainability and onboarding | |
| • Developed a Next.js + Tailwind showcase site to communicate product capabilities to business stakeholders | |
| Web Scraper — Carbon Credits
<i>Freelance</i> | <i>Sep. 2024</i>
Remote |
| • Implemented a Python Selenium pipeline to collect 5,000+ structured startup data points for market analysis and prospecting | |
| • Introduced multithreading to accelerate collection by ~40%, improving time-to-insight for commercial research | |
| Software Engineer
<i>Garage-Hero</i> | <i>May 2023 – Jul. 2023</i>
Dubai, UAE |
| • Developed React components and automated scrapers; contributed QA and debugging to increase reliability of user-facing features | |

PROJECTS

AI Assistant for IBM SkillsBuild | *Sentence-BERT, FastAPI, PostgreSQL + pgvector, Python* Sep. 2024 – May 2025

- Built a semantic search engine that outperformed BM25 baselines, enabling fast retrieval of relevant learning content
- Production-ready API for downstream RAG applications, demonstrating end-to-end data ingestion, feature extraction, vector indexing, and evaluation
- Tech transferable to retail search, merchandising discovery, and marketing content relevance

BSc Dissertation: Semantic Search Engine | *Sentence-BERT, pgvector, FastAPI* 2025

- End-to-end IR system with measurable gains (Recall@20 = 0.899, MRR = 0.843); emphasised rigorous evaluation and reproducible pipelines

TECHNICAL SKILLS

Languages: Python, SQL (PostgreSQL, pgvector), JavaScript/TypeScript, Java

ML & Data: PyTorch, scikit-learn, Pandas, NumPy, Information Retrieval, NLP, Semantic Search, RAG, Data Mining, Deep Learning

Frameworks & Tools: FastAPI, React, Next.js, Tailwind, Selenium, Git

Communication: Teaching & mentoring at UCL/QMUL; clear technical writing and documentation

CERTIFICATIONS & LANGUAGES

Certifications: Mathematics for ML (Imperial College London); TryHackMe (cyber); First Aid (PSC1); Cambridge English Advanced (C1)

Languages: French (Native), English (Fluent), German (Intermediate)