Keir Simmons

Applied Scientist · Machine Learning Engineer · UK Citizen · Japan Permanent Resident

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Summary

Accomplished engineer & scientist with a proven track record of delivering scalable, production-grade solutions that drive measurable business impact while managing relationships with a broad range of global stakeholders up to executive leadership.

At Amazon, I spearhead end-to-end projects across global teams, transforming complex technical challenges into innovative, data driven products that unlock multi-million-dollar revenue gains and operational efficiencies. My expertise in ML, MLOps, and robust CI/CD practices, combined with strategic stakeholder engagement enables me to lead initiatives from ideation to global expansion.

Prior to Amazon, I led the Adversarial AI team at *Ascent Robotics* with the goal of validating fully autonomous vehicles for Japanese roads. I also completed a research internship at the internationally-renowned *AIST AI Research Center* & AI energy company *Informetis* in Tokyo, been awarded the prestigious *Daiwa Scholarship*, and earned Master's degrees with highest merit from three top 10 global universities.

Inspired by my experiences and proven track record, I am committed to using machine learning as a catalyst for societal transformation, striving to make a genuine, lasting difference in people's lives.

Experience

Amazon
Tokyo, Japan

Senior Applied Scientist | Promoted from Applied Scientist II in Jun. 2024
Apr. 2020 - Present

- Spearheaded **5** end-to-end ML projects that established a strategic charter in Japan, launching innovative programs and personally driving their global expansion through managing 50+ stakeholders (VP to director level) across JP, US, IN, and CN.
- Engineered production-grade pipelines using AWS leveraging orchestration, serverless processing, and real-time monitoring with solutions in Python, SQL, and Scala—to deliver scalable, end-to-end ML systems.
- Authored an influential ML paper presented at our internal conference that introduced a novel contrastive learning framework to fine-tune item embeddings within the context of *replaceability*. Implementation resulted in a **26.2%** improvement in coverage of an internal dataset.
- Trained & validated multiple causal inference models to deliver **6M+** action recommendations to vendors across Amazon globally daily, with a combined daily potential estimate of **$9.4B+ USD** uplift.
- Realised an annual uplift of **$21.0M USD** through an ML-based improvement in JP address resolution, reducing failed deliveries by **81.2%**.

Ascent Robotics
Tokyo, Japan

Team Lead Research Engineer | Promoted from Research Engineer in Apr. 2019
May 2017 - Feb. 2020

- Exposed and proposed solutions to incapabilities in the vehicle AI during simulation before proceeding to in-car testing via an array of advanced Bayesian Optimisation-based adversarial search methods in our main project as the leader of the *Adversary* team.
- Led a comprehensive project at Ascent Robotics that integrated 4K aerial drone footage of vehicles in diverse Japanese scenarios with advanced computer vision, tracking, and clustering techniques to produce a foundational dataset of driver behavior clusters.

Informetis
Tokyo, Japan

Research Engineer | UCL Master's Thesis
June. 2018 - Sept. 2018

- Developed an optimal control policy for *peak-demand* energy management as part of my Master's thesis at at *UCL*, employing reinforcement learning (PPO) to strategically shift consumer demand and optimise battery storage.
- Achieved perfect peak-shifting, reducing energy consumption and utility costs by over **20%**.

AI Research Center - National Institute of Advanced Industrial Science & Technology
Tokyo, Japan

Machine Learning Researcher | Courtesy of the Daiwa Scholarship
Oct. 2016 - Mar. 2017

- Earned a competitive research placement as the only non-doctorate researcher, implementing core ML algorithms—including reproducing & fine-tuning DeepMind's Atari results.
- Led a reinforcement learning seminar designed to empower fellow researchers, fostering the application of cutting-edge ML techniques across diverse fields.

The Daiwa Anglo-Japanese Foundation
Tokyo, Japan

Daiwa Scholar
Aug. 2015 - Mar. 2017

- Awarded the prestigious Daiwa Scholarship, a unique and highly competitive programme valued at approximately 11,000,000 JPY. I was selected as one of six scholars from over 1,000 candidates to represent the United Kingdom in machine learning in Japan.
- Completed an intensive language course, achieving business level fluency in Japanese (JLPT N2).

National University of Singapore *Kent Ridge, Singapore*

UNDERGRADUATE RESEARCHER *Jan. 2014 - Jun. 2014*

- Developed a custom sound pressure level meter application for Android using Java to monitor aircraft engine noise, incorporating a real-time graphical frequency analyser that meets aviation industry standards.

Volunteering *London, UK*

WEB DEVELOPER *Jan. 2007 - Dec. 2014*

- Created over 100 advanced open-source modifications in JavaScript and PHP for use with the popular message-board services *Invision Power Board* and *ZetaBoards*, including one that was used by over 1,000,000 people. Some have now been ported to *GitHub* for posterity.

Education

University College London (UCL) *London, UK*

MSc COMPUTATIONAL STATISTICS AND MACHINE LEARNING (CSML) | **DISTINCTION** *Sept. 2017 - Sept. 2018*

- Developed a strong mathematical foundation in statistical modelling and machine learning.
- Completed rigorous projects in NLP, reinforcement learning and machine vision, including advanced language modelling, sentence ordering for coherence, biomedical feature extraction and augmented reality tracking, using Python and TensorFlow.
- Learned from leading *DeepMind* researchers including *David Silver* on the *Advanced Deep Learning & Reinforcement Learning* course.

Imperial College London *London, UK*

MEng AERONAUTICAL ENGINEERING WITH A YEAR ABROAD | **FIRST CLASS** *Oct. 2011 - Jun. 2015*

- Graduated with a strong 1st class degree with honours (80% average) and a final grade in the top 5%.
- Specialised in computational methods, achieving 100% credit in *Computational Fluid Dynamics* and *Numerical Analysis* coursework.
- Completed my Master's thesis titled *Design Synthesis of Small Unmanned Aircraft*, using numerical optimisation in Matlab for appropriate selection of aerodynamic properties of an autonomous drone, resulting in a 9% weight reduction of the final design.

National University of Singapore (NUS) *Kent Ridge, Singapore*

MEng AERONAUTICAL ENGINEERING WITH A YEAR ABROAD | **FIRST CLASS** *Aug. 2013 - May. 2014*

- Achieved a record high grade of 4.5/5.0 as the inaugural student for this exchange, selected based on academic merit.
- Self-taught Java to excel in two advanced *MIT*-based modules on computing fundamentals (for the curious, CS1101S).

Skills

TECHNICAL

Expert	Python, SQL, AWS
Proficient	Scala, Spark, PyTorch, JavaScript, Matlab, git, Flask/Streamlit
Familiar	Tensorflow, C++, Java, R, FORTRAN

MISCELLANEOUS

Core Related Skills	Machine learning, end-to-end deployment, LLMs, causal inference, reinforcement learning, stakeholder management
Natural Languages	English (native), Japanese (conversational; N2)

Honours & Awards

Junction Tokyo Hackathon (Winner of both Softbank Robotics & IBM BlueMix paths) - 400,000 JPY *Tokyo, Japan*

Hacked SoftBank's Pepper robot into a smart personal sales assistant using machine learning (image recognition & recommendation systems). Asia's largest international hackathon. *2017*

Aeronautics Scholar - Imperial College London *London, UK*

Achieved a 1st class result every year throughout the 4 year degree. *2015*

SumoBot Champion - National University of Singapore (*CS1101S Contest*) *Kent Ridge, Singapore*

Awarded 1st place against 100 other students in an AI-powered sumo-style robot showdown. *2013*

Best AS Student & Best A2 Student - The Hollyfield School & Sixth Form Centre *Surrey, UK*

Achieved the best A level grades in the college's history (A*A*AA, 520 UCAS points). *2011*