Ethan Kosak-Hine

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Education

Royal Holloway, University of London: MSci Physics (2:1) Sep 2019 – Jul 2023
University College London: MSci Physics intercollegiate program (First class) Sep 2022 – Jul 2023
Queen Mary, University of London: MSci Physics intercollegiate program (First class) Sep 2022 – Jul 2023
Vyners School Sep 2012 – Jun 2019

Academic Achievements

- Master's Thesis: Searching for evidence of climate change using machine learning (Grade: First class)
- Research Review: Lepton Flavour Violation searches at the ATLAS detector (Grade: First class)
- Gravitational Wave Data Analysis (Grade: First class)
- Extrasolar Planets and Astrophysical Discs (Grade: First class)
- Research Project: Higgs boson decay phenomenology and theory (Grade: First class)

Skills

- **Programming and Data Analysis Tools:** Proficient in Python, C, Mathematica, and key data science libraries (NumPy, SciPy, matplotlib, pandas). Experienced in machine learning frameworks like PyTorch and scikit-learn. Utilised these tools in academic and independent projects, focusing on data analysis and statistical modelling. Skilled in Git and GitHub for version control.
- **Machine Learning/Deep Learning:** Applied ML and DL models in climate and particle physics, and AI safety research, mainly using PyTorch and scikit-learn. Proficient in transformer architectures and experienced in using cloud platforms like RunPod for GPU-intensive tasks.
- **Physics Research Tools**: Gained hands-on experience using specialised physics software, such as PyROOT for ROOT data analysis framework used in particle physics and Mathematica for complex calculations.

Work Experience

Embedded Systems Developer, Atomic Weapons Establishment Oct 2023 – Present
- Work within the Radiological Instrumentation & Calibration team on embedded systems, primarily using C.

Summer Research Placement, Royal Holloway Physics Department Jun 2022 – Sep 2022
- Optimised a neural network model used to separate potential signal events from background events in simulated data.

Independent Science and Mathematics Tutor Jul 2017 – Mar 2020
- Tutored nine students from KS3 to A-level in Physics, Biology, and Mathematics.

Extra-Curricular Experience

Backend Developer, Sentiment Jan 2024 - Present
- Led AI integration for Sentiment, a hackathon-born AI-powered tool for journaling and music curation, using OpenAI's GPT-4, DALL-E 3, and Whisper APIs.
- Integrated Spotify's API for mood-based personalised music playlists, implemented using a React-based application for interactive user experience.

Researcher, Supervised Program on Alignment Research Sep 2023 – Dec 2023
- Conducted research into how activation steering and representation engineering can be used to reduce sycophancy in LLMs.

AI Alignment Bootcamp, ML4Good Germany Aug 2023 – Sep 2023
- Selected for an exclusive ten-day AI bootcamp in Germany that provided advanced training in deep learning and AI safety research.

Co-Founder, SimpleAISafety.org Sep 2023 – Present
- Co-founded simpleaisafety.org, an online resource that conveys technical AI safety concepts in varying difficulty levels to increase the accessibility of the content, as well as translating them to multiple languages.

Content Writer, The Founder Newspaper Sep 2021 – Jun 2022
- Enhanced written communication skills by explaining complex concepts to a general audience.

Interests

Philosophy: Passionate about ethics and moral philosophy, including Effective Altruism.
Mindfulness: Regular practitioner of mindfulness meditation and Stoicism.
Blackbelt in Taekwondo

Referees (available on request)