

Thomas Walker

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🌐 <https://thomaswalker1.github.io/>

EDUCATION

MSc Advanced Computer Science

October 2024 - September 2025

University of Oxford

BSc Mathematics

September 2021 - June 2024

Imperial College London

- First Class Honours: 89% Final Grade

A-levels

September 2019 - June 2021

Reading School

- Mathematics: A*, Further Mathematics: A*, Physics: A*, Extended Project Qualification: A*

EXPERIENCE

Student Researcher

June 2024 - September 2024

Helmholtz Munich - AIDOS Lab - Professor Bastian Rieck

- Understanding how transformer models represent concepts in their latent representations.

Student Researcher

July - September 2023

Imperial College London - Safe Artificial Intelligence Lab - Professor Alessio Lomuscio

- Investigating neural network generalization with a focus on PAC learning theory. Refined the evaluation of PAC bounds using testing certificates on regions of the input space.

Student Researcher

September - October 2022

Imperial College London - Dr Dean Bodenham

- Investigating how programming languages (Python, R, C++) generate pseudo-random numbers. Developing a repository of functions to align pseudo-random number generators across languages.

Data Consultant

June - September 2022

BAE Digital Intelligence

- Investigating project operations and developing strategies to improve resource utilization. Tasks involved working with database infrastructure (SQL, Java), AWS and developing a data dashboard in Python (Dash, Selenium).

Website Administrator

December 2021 - June 2024

Imperial Wiki Society

- Working on a student-led initiative to develop an online platform to host supplementary material for modules taught at the university. Focusing on managing the project and developing resources for the mathematics modules.

PAPERS

Tightening the Evaluation of PAC Bounds with Formulation Verification Results

July 2024

ArXiv Preprint

AWARDS

IBM Prize For Excellence In Pure Mathematics

August 2024

Imperial College London Department of Mathematics

- Awarded to a final year student of Mathematics in recognition of high academic achievement and excellence in Pure Mathematics.

PRESENTATIONS

Using Region Tests to Evaluate PAC Bounds

September 2023

Imperial College London - Safe Artificial Intelligence Lab Seminar

Jordan Algebras

June 2023

Imperial College London - Group Research Project

Aligning Pseudo-Random Number Generation in Python, R and C++

October 2022

Imperial College London - 3-Minute UROP Thesis Talk

FUNDING

Undergraduate Research Project Funding

July-August 2023

Imperial College London - Department of Mathematics and Department of Computer Science

ARTICLES

The Prime Minister's Mathematical Propositions

July 2023

Imperial College London - Faculty of Natural Sciences Blog Post

WORKSHOPS

Spires - Centre for Topological Data Analysis at the University of Oxford

August 2024

- Bringing together leading researchers and young talent in the field of topological data analysis and cognate areas. With the applications of topological data analysis and the future of the field discussed.

Human Aligned AI Summer School - Centre for Theoretical Study at Charles University

July 2024

- Four intensive days of talks, workshops, and discussions covering the latest trends in AI alignment research and broader framings of AI alignment research.

Geometric Deep Learning - Mathematics for Deep Learning

June 2024

- A workshop summarising the recent advances in the field of geometric deep learning.

X-Risk - Global Challenges Project

May 2023

- A workshop on investigating approaches taken to AI safety research.

AI Safety Fundamentals - Imperial Effective Altruism Society

October - December 2022

- Comprised of eight group discussion sessions on the literature surrounding the concerns of powerful AI systems and the research on AI safety.

VOLUNTEERING

Treasurer

October 2021 - July 2022

Imperial College London - Linstead Halls

Dog Fosterer

May 2020 - August 2022

Royal Society for the Prevention of Cruelty to Animals (RSPCA), The Responsible Dog Rescue

TECHNICAL SKILLS AND INTERESTS

Spoken Languages (Fluent): English, Italian

Programming Languages (Intermediate): Python, Latex, Markdown

Programming Languages (Basic): HTML, JavaScript

Miscellaneous Qualifications : Royal Life Saving Society National Pool Lifeguarding Qualification, Bronze Duke of Edinburgh

Extracurricular Activities: Tough Mudder 2021, Hyde Park Relay 2022, Rome Marathon 2024