# Jack Wilkie

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## Personal Statement

Highly motivated machine learning researcher. Pursuing a PhD in Representation Learning for Cybersecurity. This has lead to expertise in contrastive learning, self supervised learning and anomaly detection using modern and bespoke approaches. Experienced in numerous engineering and AI related projects with a first class honours degree in Electronics and Electrical Engineering.

## Education

**University of Strathclyde, Glasgow**     **2022 - Present**

*PhD, Project Title: Representation Learning for CyberSecurity*

- Currently working towards a PhD at the university of Strathclyde, on a project which involves applying representation learning techniques to network intrusion detection and malware classification.
- Produced several manuscripts proposing novel contributions and algorithmic advancements across several areas including learning from limited data, contrastive learning, and open set recognition.
- Engaged with the academic community by acting as a guest speaker to the University of Lincoln and peer reviewing several manuscripts for journals such as Network: Computation in Neural Systems and IEEE Transactions on Emerging Topics in Computational Intelligence.

**University of Strathclyde, Glasgow**     **2017 - 2021**

*BEng in Electronics and Electrical Engineering*     *First Class Honours*

- Graduated from the University of Strathclyde with a Bachelor's degree in Electronics and Electrical Engineering, achieving first class honours.
- Excelled in both taught lectures and individual research across modules containing a variety of content including signal processing, advanced mathematics, and software engineering.

## Work Experience

**University of Strathclyde**     **November 2024 – Present**

*Research Assistant*     *Glasgow*

- Developed an LLM based agent to automatically port x86 source code to ARM's Morello architecture.
- Delivered technical reports and presentations to dissipate research to internal and industrial partners.
- Acted as a teaching assistant for the class "Engineering Design for Software Development" assisting students in practical laboratory sessions teaching the fundamentals of software engineering and object oriented programming.

**Lupovis**     **June 2021 – August 2021**

*Research Intern*     *107 West Regent Street, G2 2BA*

- Conducted an in-depth literature review on the use of machine learning for cybersecurity to determine strategies to detect advanced persistent threats (APTs) in networks.
- Developed a tool for automatically finding attack paths through any given network and representing them as a graph. This acted as a input to probabilistic graphical models such as Markov chain models, and graphical neural networks.
- Communicated with shareholders by maintaining live documentation, delivering weekly presentations, and writing an internal white paper.

**Alzheimer's Research UK**     **September 2018 – May 2020**

*Fundraising Volunteer*     *Glasgow*

- Volunteered as part of a regional committee for Alzheimer's Research UK, which was responsible for raising awareness and fundraising in the local area.
- Acted as social media manager for the charity's regional committee, responsible for creating and maintaining an online presence for the charity on social media platforms and maximising engagement when promoting upcoming events.
- Raised several thousand pounds by organising and attending charitable events such as supermarket bucket collections, pub quizzes, and sponsored runs.

**Retronix**     **September 2015**

*Industrial Intern*     *North Caldeen Road, ML5 4EF*

- Completed an internship within the electrical engineering industry, gaining hands on experience across the company and developing professional skills.

## Publications

- Currently have several academic manuscripts under peer review. Details availble at: www.jackwilkie.co.uk.