Jack Wilkie

+44 7905045777 jackwilkie78987@gmail.com Jack Wilkie jackwilkie jackwilkie.github.io

Personal Statement

Highly motivated machine learning researcher, concluding a PhD in Representation Learning for Cybersecurity. Expertise in contrastive learning, self-supervised learning, and anomaly detection using modern and bespoke methods. Experienced across engineering and AI projects, with a First Class Honours degree in Electronics and Electrical Engineering.

Education

University of Strathclyde, Glasgow **2022 - Expected 2025**

PhD, Project Title: Representation Learning for CyberSecurity

- Currently writing a thesis for a PhD at the University of Strathclyde, concluding a project 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 – March 2025**

Research Assistant *Glasgow*

- Developed an LLM based agent to automatically port x86 source code to ARM's Morello architecture.
- Worked with external partners to analyse and identify anomalous patterns in DAS data collected from wind farms.
- Delivered technical reports and presentations to disseminate 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.

Publications

- **Wilkie, J.**, et al., *"Signal-Based Malware Classification using 1D CNNs"*, *Springer Cybersecurity*, Accepted, In Press.
- **Wilkie, J.**, et al., *Contrastive Self-Supervised Network Intrusion Detection using Augmented Negative Pairs*, *IEEE Conference on Cyber Security and Resilience (CSR)*, 2025. Accepted, In Press.