# Andrew Ferguson

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## Research Focus

My research focuses on the softwarisation of next-generation mobile networks. While this can transform networks, it remains unclear which long-held assumptions are broken and how far cloud-style resource sharing can be pushed. My recent work explores this through cloud computing paradigms and developing a campus-scale 5G network.

## Education

- **PhD, University of Edinburgh** (Oct 2022 - Jul 2027 (expected))
  - PhD in Networked Systems, supervised by Professor Mahesh Marina, focusing on the softwarisation of next-generation mobile networks, particularly regarding scalability, resilience and real-world deployment.
- **Master of Informatics (MInf), University of Edinburgh** (Sept 2017 - Jul 2022)
  - Computer Science (5-year integrated MInf with Honours). Degree classification: First Class.
  - Masters project focused on the design of autoscaling and resilient mobile core networks.
  - 1st Honours Class in all modules, including networking, operating systems and computer architecture.

## Selected Publications

- **Andrew E. Ferguson***, Ujjwal Pawar*, Tianxin Wang, and Mahesh K. Marina, "*Campus5G: A Campus Scale Private 5G Open RAN Testbed*", in ACM SIGCOMM CCR, July 2025.
- Ujjwal Pawar, **Andrew E. Ferguson**, Yuto Takano, Jon Larrea, Xenofon Foukas, Mahesh K. Marina, and Bozidar Radunovic, "*Towards Scalable and Cost-Effective RAN Emulation Leveraging the Public Cloud*", in ACM HotMobile'25, Feb 2025.
- Nitinder Mohan*, **Andrew E. Ferguson***, Hendrik Cech*, Rohan Bose, Prakita Rayyan Renatin, Mahesh K. Marina, and Jörg Ott, "*A Multifaceted Look at Starlink Performance*", in ACM TheWebConf'24, May 2024. IRTF Applied Networking Research Prize 2025.
- **Andrew E. Ferguson***, Jon Larrea* and Mahesh K. Marina, "*CoreKube: An Efficient, Autoscaling and Resilient Mobile Core System*", in ACM MobiCom'23, Oct 2023. Best Artifact Award.

(*) Co-primary authors.

## Experience

- **Teaching Assistant and Marker — University of Edinburgh** (2022-2025, Part-time)
  - (2022-2025) Marked and provided feedback for a practical coursework in a networking course.
  - (2024) Responsible for the delivery of a coursework in a networking course, including coursework preparation, publication, regular tutorial sessions and answering student questions.
- **Research Assistant — University of Edinburgh** (2024,2025)
  - Led efforts to deploy a first-of-its-kind 5G private network (outdoor, 20 radios, O-RAN compliant) across a university campus as part of a DSIT-funded research project, enabling real-world study of scalability, multi-vendor and operational trade-offs in a realistic private 5G setting.
  - Oversaw all major hardware and component choices, designed the backbone network and supervised the network installation, and architected the compute platform supporting the virtualised network functions.
- **Research Internship — Telefonica Research** (Sept 2024 - Dec 2024)
  - Led efforts to research new architectures enabling performant and low-cost global mobile network operators through a cloud-based distributed data plane.
  - Developed and evaluated novel data-plane designs tailored to business and operational constraints.
  - Responsible for the overall design and its implementation, and coordinating the evaluation of the system.

## Experience (continued)

- **Communications Team Lead — Asteria Space and Satellite Development** (Feb 2020 - May 2023)
  - Responsible for developing the technical communications strategy for a satellite.
  - Evaluated the choice of communications hardware and ground stations, as well as the mission suitability of the chosen hardware and its integration with the other subsystems.
  - Responsible for regulatory compliance and spectrum licensing for the desired communication frequencies.
- **Junior Research Assistant — University of Edinburgh** (Summer 2022)
  - Co-authored a paper expanding upon the research work undertaken as part of my master's degree, relating to the design and evaluation of a cloud-native, scalable and resource efficient mobile core network.
- **EPSRC Research Intern — University of Edinburgh** (Summer 2021)
  - Assisted with a study of mobile networks in a realistic environment, being responsible for collecting and pre-processing measurements of different scenarios (stationary, mobile, etc.) in an outdoor environment.

## Awards

- **Best Demo Award, MobiCom'25** (Nov 2025)
  - Awarded Best Demo Award at MobiCom'25 for "*A Campus Scale Private 5G Open RAN Testbed*" (with Ujjwal Pawar, Tianxin Wang, and Mahesh K. Marina).
- **IRTF Applied Networking Research Prize** (Jul 2025)
  - Awarded IRTF Applied Networking Research Prize for the paper "*A Multifaceted Look at Starlink Performance*" presented at TheWebConf'24 (with Nitinder Mohan, Hendrik Cech, Rohan Bose, Prakita Rayyan Renatin, Mahesh K. Marina, and Jörg Ott).
  - The award recognises the best recent results in applied networking and interesting new research ideas of potential relevance to the Internet standards community.
- **2nd Place: MobiUK Best Presentation Award** (Jul 2025)
  - Awarded 2nd Place at MobiUK'25 for "*On Deploying a Campus Scale Private 5G Open RAN Testbed*".
- **2nd Place: The RIPE Labs Article Competition** (Sept 2024)
  - Awarded 2nd Place in the RIPE Labs Article Competition (with Nitinder Mohan) for the article adaptation of the paper "*A Multifaceted Look at Starlink Performance*" presented at TheWebConf'24.
  - The award recognises articles of particular interest to those who help operate the Internet.
- **Best Artifact Award, MobiCom'23** (Oct 2023)
  - Awarded Best Artifact Award at MobiCom'23 for the artifact accompanying "*CoreKube: An Efficient, Autoscaling and Resilient Mobile Core System*" (with Jon Larrea, Mahesh K. Marina and Yuto Takano).

## Professional Service

- **External Reviewer** (2023 - 2025)
  - Served as an external reviewer for INFOCOM'26, IEEE Internet Computing 2024, LEO-NET'23.
  - Invited to serve as an external reviewer for multiple venues and conferences. Focused on works related to my current area of research (5G networked systems, non-terrestrial networks).
- **IMC'25 Shadow Program Committee** (2025)
  - Served on the shadow program committee for IMC'25. Reviewed papers, discussed with other reviewers and led the discussion of one paper at the (shadow) TPC meeting.
- **Artifact Evaluation Committees** (2025)
  - Served on the artifact evaluation committee for multiple conferences (MobiCom'25, CoNEXT'25).
  - Reviewed the artifacts (code, scripts to generate figures, etc.) to judge their suitability to meeting the artifact badges (functional, reusable, results replicated, etc.).