Linus Ericsson

scholar.google.com | linus.ericsson@ed.ac.uk | linusericsson.github.io

I am a postdoctoral researcher at the University of Edinburgh, focusing on representation learning, efficient architectures and adaptation across distribution shifts. I have published work in top venues, including NeurIPS, CVPR and the IEEE Signal Processing Magazine. My broader research interests include multimodal learning and responsible applications to climate and healthcare.

Publications

Citations on Google Scholar: 1000+

Transferrable Surrogates in Expressive Neural Architecture Search Spaces
Qin, S., Kadlecová, G., Pilát, M., Cohen, S. B., Neruda, R., Crowley, E. J., Lukasik, J., **Ericsson, L.**,
Under submission, 2025

Evolutionary Architecture Search Through Grammar-Based Sequence Alignment
Gómez, A., Möller, F., McDonagh, S., Abella, M., Desco, M., Crowley, E. J., Klein, A., **Ericsson, L.**,
Under submission, 2025

`einspace`: Searching for Neural Architectures from Fundamental Operations
Ericsson L., Espinosa M., Yang C., Antoniou A., Storkey A., Cohen S. B., McDonagh S., Crowley E. J.,
In NeurIPS, 2024, *paper link*

PlainMamba: Improving Non-Hierarchical Mamba in Visual Recognition
Yang C., Chen Z., Espinosa M., **Ericsson L.**, Wang Z., Liu J., Crowley E. J.,
In BMVC, 2024, *paper link*

Label-Efficient Object Detection via Region Proposal Network Pre-Training
Dong N., **Ericsson L.**, Yang Y., Leonardis A., McDonagh S.,
Neurocomputing, 2024, *paper link*

Parameter-Efficient Fine-Tuning for Medical Image Analysis: The Missed Opportunity
Dutt R., **Ericsson L.**, Sanchez P., Tsaftaris S. and Hospedales, T. M.,
In Medical Imaging with Deep Learning (oral), 2024, *paper link*

Better Practices for Domain Adaptation
Ericsson L., Li D. and Hospedales, T. M.,
In AutoML (best paper award), 2023, *paper link*

Self-Supervised Disentanglement by Leveraging Structure in Data Augmentations
Eastwood C., von Kügelgen J., **Ericsson L.**, Bouchacourt D., Vincent P., Schölkopf B., Ibrahim M.,
In Causal Representation Learning, Workshop at NeurIPS, 2023, *paper link*

Why Do Self-Supervised Models Transfer? On the Impact of Invariance on Downstream Tasks
Ericsson L., Gouk H. and Hospedales, T. M.,
In BMVC, 2022, *paper link*

Self-Supervised Learning: Introduction, Advances and Challenges
Ericsson L., Gouk H., Loy, C.C. and Hospedales, T. M.,
IEEE Signal Processing Magazine, 2022, *paper link*

How Well Do Self-Supervised Models Transfer?
Ericsson L., Gouk H. and Hospedales, T. M.,
In CVPR, 2021, *paper link*

Work Experience

University of Edinburgh **Edinburgh, UK**
Postdoctoral Researcher, School of Engineering *Nov 2023 - Present*

My postdoctoral research focuses on the fundamentals of neural architectures, with a focus on model efficiency. I am also more broadly involved in projects on efficient training of large language models and hyperparameter optimisation over distributions shifts.

Supervisor: Dr Elliot J. Crowley

Work Experience Cont'd

Samsung AI Center **Cambridge, UK**
Research Scientist Intern *Sept 2022 – Feb 2023*

I worked as a research scientist intern with Professor Timothy M. Hospedales and Dr Da Li for 6 months. The project centred around unsupervised domain adaptation, with a special focus on providing reliable model selection and hyperparameter optimization in the absence of target domain labels.
Led to a published paper in AutoML 2023 (Best Paper award).

Supervisor: Prof. Timothy M. Hospedales

Huawei Noah's Ark Lab **London, UK**
Research Scientist Intern *Oct 2021 - Mar 2022*

I worked as a research scientist intern with Dr Steven McDonagh and Dr Yongxin Yang for 6 months. The project centred around large-scale object detection for autonomous driving, with a special focus on improving self-supervised pre-training on autonomous driving data.
Led to a published paper in Neurocomputing 2024.

Supervisor: Dr Steven McDonagh

Computer Vision Research Group – Durham University **Durham, UK**
Research intern *2017*

I worked with Professor Toby Breckon over a summer, developing dense stereo vision and visual odometry for robotics. I also had the chance to collaborate with the Centre for Vision and Visual Cognition on a project involving Brain-Computer Interfaces as an application of deep learning.

Supervisor: Prof. Toby Breckon

Education

University of Edinburgh **Edinburgh, UK**
PhD in the Centre for Doctoral Training in Data Science, *2019 - 2024*
including an MScR degree at the beginning of the programme. *(Awarded 30 Jan 2024)*

My research focused mainly on unsupervised representation learning by exploiting the underlying structure in data rather than manual annotation. I also explored effective knowledge transfer from large-scale pre-training to application domains with limited data and compute resources, using transfer learning and domain adaptation approaches.

Supervisor: Prof. Timothy M. Hospedales

Durham University **Durham, UK**
MEng in Computer Science, First Class Honours *2014 - 2018*

MEng Project: Evaluating cross-domain and multi-task performance of deep reinforcement learning across the Atari benchmark (Presented at the Rising Stars Research Symposium 2018).

Supervisor: Prof. Magnus Bordewich

BSc Project: Composing Live Music with Neural Networks and Genetic Algorithms (Bronze Award for Best Poster for undergraduate project)

Supervisor: Dr Steven Bradley

Academic Engagement

Awards

- Top 25 most downloaded articles, Signal Processing Magazine (2023 & 2024)
- Best paper award, AutoML conference (2023)
- Rising Stars Research Symposium, Durham University (2018)
- Best Individual Poster Prize for undergraduate project, Durham University (2017)
- Outstanding Achievement L1, Durham University (2015)

Teaching

- *Digital Signal Processing Summer School*, Atlas Elektronik UK (2025)
- *Guest Lecture in Data Analysis and Machine Learning 4*, University of Edinburgh (2025)
- *Machine Learning in Signal Processing*, Tutor, University of Edinburgh (2025)
- *Computer Programming for Speech and Language Processing*, Demonstrator & Marker, University of Edinburgh (2019 & 2020)
- *Introductory Applied Machine Learning*, Tutor & Marker, University of Edinburgh (2019)
- *Machine Learning and Pattern Recognition*, Marker, University of Edinburgh (2019)
- *Introduction to Programming*, Demonstrator, Durham University (2017)
- *Theory of Computation*, Tutor, Durham University (2017)

Funding

- Compute resources on the JUWELS multi-petaflop modular supercomputer, at 120k core-hours (2025).
- Contract with Alan Turing Institute and the Defence Science and Technology Laboratory (Dstl) worth £6,559 (2020).

Outreach

- Visiting fellow at Bjerknes Centre for Climate Research (2025)
- Teaching at the AEUK Digital Signal Processing Summer School (2025)
- Mentor at Women in Machine Learning (WiML) Workshop at NeurIPS (2024)

Invited Speaker

- Bjerknes Centre for Climate Research (2025)
- Cerebras Seminar Series (2025)
- AutoML Seminars (2024)

Memberships

- Computer Vision Foundation (CvF)
- British Machine Vision Association (BMVA)
- Institute of Electrical and Electronics Engineers (IEEE)
- Climate AI Nordics

Reviewing

- *Conferences:* CVPR (2025), NeurIPS (2024), ICLR (2024), ICML (2023), BMVC (2024), ECCV (2024), AutoML (2023, 2024 & 2025)
- *Workshops:* DMLR (*ICML*, 2023), DG (*ICML*, 2023), SSL Theory and Practice (*NeurIPS*, 2022, 2023), URCV (*BMVC*, 2022)
- *Journals:* Nature Communications (2025), Transactions on Machine Learning Research (2025)

Continual Development

- Early Career Researcher Application Writing Training (2025)
- Achieving Social Impact from Science & Engineering (2025)
- Standing up for Science Workshop - Sense about Science (2024)
- Climate Change AI Virtual Summer School (2024)
- IRDTA DeepLearn Summer School (2022)