Linus Ericsson

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I am a finishing PhD student at the University of Edinburgh. My research is on unsupervised representation learning by exploiting the underlying structure in data rather than manual annotation. My work has appeared in CVPR, BMVC and the Signal Processing Magazine, among others. My other research interests include multimodal learning and responsible applications to healthcare and climate.

PUBLICATIONS

Region Proposal Network Pre-Training Helps Label-Efficient Object Detection
Ericsson L., Dong N., Yang Y., Leonardis A. and McDonagh, S.,
In Self-Supervised Learning - Theory and Practice, Workshop at NeurIPS, 2022, arXiv:2211.09022

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, arXiv:2111.11398

How Well Do Self-Supervised Models Transfer?
Ericsson L., Gouk H. and Hospedales, T. M.,
In CVPR, 2021, arXiv:2011.13377

Self-Supervised Learning: Introduction, Advances and Challenges
Ericsson L., Gouk H., Loy, C.C. and Hospedales, T. M.,
IEEE Signal Processing Magazine, arxiv :2110.09327

EDUCATION

University of Edinburgh **Edinburgh, UK**
PhD in the Centre for Doctoral Training in Data Science *2019 - present*

My research is on **unsupervised representation learning** by exploiting the underlying structure in data rather than manual annotation. I am also interested in how traditional supervised learning can benefit from self-supervised methods, as the advantage of learning from labels diminishes.
Supervisor: Prof. Timothy M. Hospedales

University of Edinburgh **Edinburgh, UK**
MSc(R) Data Science, Merit (68%) *2018 - 2019*

MSc Project: ARCTIC: A Fast Online Algorithm for Learning Additional Rewards in RL - We develop an RL meta-learning algorithm which alleviates the need for designing manual rewards, and guides an agent toward a more domain-generalisable policy.
Supervisor: Prof. Timothy M. Hospedales

Durham University **Durham, UK**
MEng in Computer Science, First Class Honours (80%) *2017 - 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

Durham University **Durham, UK**
BSc in Computer Science, First Class Honours (82%) *2014 - 2017*

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

WORK

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

Working as a research scientist intern with Timothy Hospedales and Da Li for 6 months. The project centres around unsupervised domain adaptation, with a special focus on providing reliable model selection and hyperparameter optimization in the absence of target domain labels.
Supervisor: Prof. Timothy M. Hospedales

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

Working as a research scientist intern with Steven McDonagh and Yongxin Yang for 6 months. The project centres around large-scale object detection for autonomous driving, with a special focus on improving self-supervised pre-training on autonomous driving data.
Supervisor: Dr Steven McDonagh

Teaching Experience **Edinburgh & Durham, UK**
Tutoring, demonstrating and marking *2017 - present*

I have undertaken tutoring, demonstrating and marking roles during my university time. This has included teaching undergraduate and postgraduate students in the following courses:

- Introductory Applied Machine Learning
- Introduction to Programming (in Python/Java)
- Computer Programming for Speech and Language Processing
- Theory of Computation.

Computer Vision Research Group **Durham, UK**
Research internship at Durham University *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
