

 GraML

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# GRAZ CENTER FOR MACHINE LEARNING OPENING EVENT

17.10.2022, 6:00 pm - 9:00 pm  
TU Graz, Aula, Rechbauerstraße 12, Graz

## PROGRAMME

- Welcome  
Univ.-Prof. Dipl.-Ing. Dr.techn. Dr.h.c.mult. Rektor Kainz, Rector TU Graz  
Nationalratsabgeordneter Rektor a.D. Univ.-Prof. Dr. Josef Smolle
- Introduction  
Dekan Univ.-Prof. Roderick Ph.D. Roderick Bloem, Dean of the Faculty of  
Computer Science and Biomedical Engineering, TU Graz
- Introduction to the Graz Center for Machine Learning  
Univ.-Prof. Dipl.-Ing. Dr.techn. Robert Legenstein
- Keynote Lecture  
Prof. Amos Storkey, University of Edinburgh, UK
- Buffet

Please register for the event by email: [GraML-event@igi.tugraz.at](mailto:GraML-event@igi.tugraz.at)

<https://tugraz.at/go/graml>

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## GRAZ CENTER FOR MACHINE LEARNING

### Keynote: On Robust Machine Learning for Natural and Medical Imaging

Robustness is a catch-all term used to describe the expectation that our machine learning methods should not break in the context of some minor domain shift. However it has long been known that neural networks can produce fragile methods that easily break when things change. This is an issue throughout computer vision and machine learning, but is particularly an issue in medical imaging, where methods developed need to be robust to changes in demographic, changes in imaging equipment, variations in pathology, differences in prior medical health, and differences in choices or setting a radiographer might use. Failure in robustness can result in both poor performance and the introduction of serious bias.

In this talk I will demonstrate, with examples, reasons why neural networks and machine learning methods more generally can be non-robust, and characterise solutions to robustness into three types of approaches: structural, invariant and equivariant measures.

**Amos Storkey** is Professor of Machine Learning and Artificial Intelligence at the School of Informatics, University of Edinburgh. Storkey studied mathematics at Trinity College, Cambridge and obtained his doctorate from Imperial College, London. He leads the Bayesian and Neural Systems Research Group and is Director of the EPSRC Centre for Doctoral Training in Data Science. On the methodological side, he is known for his contributions to meta-learning and few shot learning, efficient neural network design, reinforcement learning, dataset shift, and transactional mechanisms for machine learning. His focus is machine learning for images and video; as part of that he has a long history of developments in medical imaging - historically in brain MRI and diffusion MRI, and more recently in brain CT and retinal imaging.

