Imaging inverse problems and generating models: sparsity and robustness versus expressivity

Monday 4 – Thursday 7 May 2026

The programme is subject to change. All times are British Summer Time (BST).

MONDAY 4 MAY	
09.00-09.25	Registration and refreshments
09.25-09.30	Welcome and housekeeping
09.30-10.00	Generative models: Clarice Poon, University of Warwick *Inverse optimal transport*
10.00-10.30	Generative models: Johannes Hertrich, Université Paris Dauphine *On the Relation between Rectified Flows and Optimal Transport*
10.30-11.00	Refreshments
11.00-11.30	Imaging with uncertainties: Yiqiu Dong, Technical University of Denmark *Promoting Sparsity via Conditional Priors in Bayesian Inference*
11.30-12.00	Optimization & learning: Luca Calatroni, Università degli studi di Genova *Blind image reconstruction: from LMMSE estimators to convergent plug and play approaches*
12.00-14.00	Lunch
14.00-14.30	Optimization & learning: Kristian Bredies, University of Graz *Infinite Infimal Convolution Regularization: Concepts, Models and Optimization*
14.30-15.00	Optimization & learning: Jean-Christophe Pesquet, Paris-Saclay University *Some recent results on iterations based on cophypomonotone operators*
15.00-15.30	Refreshments
15.30-16.10	Software talk: Andrew Wang, DeepInverse *Get started with DeepInverse for image reconstruction with deep learning*
16.10-18.30	Software hands on: Andrew Wang, DeepInverse Discussions & Collaborations
18.30-19.30	Welcome reception

TUESDAY 5 MAY	
09.30-10.00	Generative models: Agnes Desolneux, Paris-Saclay University *An analysis of discrete (categorical) diffusion models with few data*
10.00-10.30	Generative models: Alain Oliviero-Durmus, Ecole Polytechnique *A Mixture-based Framework for Guiding Diffusion Models*
10.30-11.00	Refreshments

11.00-11.30	Learning for Inverse problems: **Serena Morigi**, University of Bologna *A Guided Variational Network for Image Decomposition*
11.30-12.00	Learning for Inverse problems: **Matthias Ehrhardt**, University of Bath *A primal-dual algorithm for image reconstruction with input-convex neural network regularizers*
12.00-14.00	Lunch
14.00-15.30	Poster session
15.30-16.00	Refreshments
16.00-18.30	Discussions & Collaborations

WEDNESDAY 6 MAY	
09.30-10.00	Optimization & learning: **Nicolas Papadakis**, Institut de Mathématiques de Bordeaux, CNRS *Posterior Sampling with the Proximal Stochastic Gradient Langevin Algorithm*
10.00-10.30	Optimization & learning: **Rémi Gribonval**, INRIA *Training dynamics of ReLU Networks: a Path-lifting Perspective*
10.30-11.00	Refreshments
11.00-11.30	Generative models: **Ségolène Martin**, Inria Lyon *Flow Matching Meets Denoising*
11.30-12.00	Generative models: **Mathurin Massias**, INRIA *The generalization of flow matching and its temporal phases: why and when does it work?*
12.00-14.00	Lunch
14.00-14.30	Learning for Inverse problems: **Caroline Chaux**, CNRS, I2M *Learning through unrolling a weighted least squares data term to adapt to noise in image deconvolution*
14.30-15.00	Learning for Inverse problems: **Michael Davies**, University of Edinburgh *Self Supervised Learning in imaging inverse problems*
15.00-15.30	Learning for Inverse problems: **Tatiana Bubba**, University of Ferrara *Self-Supervised Deep Equilibrium models: learning from limited data*
15.30-16.00	Refreshments
16.00-16.40	Software talk: **Thomas Moreau,** Benchopt *Benchopt: reproducible, efficient, and collaborative ML and optimization benchmarks*
16.40-18.30	Software hands on: **Thomas Moreau,** Benchopt Discussions & Collaborations
19.30	Workshop dinner at Pizza Posto *16 Nicolson St, Edinburgh EH8 9DH*

THURSDAY 7 MAY	
09.30-10.00	Imaging applications: **Margaret Duff**, STFC - UKRI *Improving usability and accessibility of image reconstruction algorithms, with examples of stochastic optimisation for PET, MRI and CT*
10.00-10.30	Imaging applications: **Yves Wiaux**, Heriot-Watt University *The R2D2 deep neural network series paradigm for fast precision imaging in radio astronomy and MRI.*
10.30-11.00	Refreshments
11.00-11.30	Learning for Inverse problems: **Marcelo Pereyra**, Heriot-Watt University *Toward fast, modular and explainable physicsinformed generative AI for image restoration: a diffusion deep unfolding, distillation and Langevin sampling approach*
11.30-12.00	Learning for Inverse problems: **Sebastian Neumayer**, TU Chemnitz *Learning Regularization Functionals*
12.00-14.00	Lunch and end of workshop

Poster Presenters	
P1	Sofia Agostoni, University of Genoa *Automatic regularisation approaches for 2D/3D Image Scanning Microscopy*
P2	Harshit Bajpai, Indian Institute of Technology Roorkee (IIT Roorkee) *Graph Laplacian Assisted Iterative Regularization for Ill-Posed Problems with Applications to Medical Imaging*
P3	Cristian Bonato, Heriot-Watt University *Reconstructing magnetisation of complex magnetic textures*
P4	Arwa Dabbech, Heriot-Watt University *A deep-learning approach for joint calibration and imaging in radio astronomy*
P5	Zeljko Kereta, University College London *Trajectory Stitching for Solving Inverse Problems with Flow-Based Models*
P6	Teresa Klatzer, University of Edinburgh *Mirror Langevin Dynamics with Plug-and-Play Priors for Poisson Inverse Problems*
P7	Arthur Leclaire, Telecom Paris *Controllable Blind Debluring with Diffusion Models*
P8	Cristiano Parenti, University of Modena and Reggio Emilia *An Inexact-Proximal Plug-and-Play Method with Line Search for Nonconvex Inverse Problems*
P9	Gabriele Scrivanti, MaLGa center, DIBRIS, Università di Genova *A self-supervised approach for quantitative parameter estimation in fluorescence microscopy for stable design of photovoltaic materials*
P10	Jonathan Spence, Heriot-Watt University *Deep Unfolding of MCMC Kernels*
P11	Bernardin Tamo Amougou, Heriot-Watt University *An Equivariant Self-Supervised VAE for Uncertainty Quantification in Bayesian Imaging Problems*
P12	Pierre-Antoine Thouvenin, Centrale Lille *CARDS: a Python library of Composable Algorithms for Reproducible Distributed Sampling*
P13	Xiaoyu Wang, Heriot-Watt University *Scalable training of stochastic spiking neural networks*
P14	Lingyi Yang, University of Nottingham *Distilling score-based diffusion models with path signatures*