Mathematics of Neural Networks and Deep Learning

Keynote speaker:	Gitta Kutyniok	The Mathematics of Deep Learning: Can we Open the Black Box of Deep Neural Networks?
	Technical University of Berlin	
Session Chair:	Margaret Duff, Bath	
Session speakers:	Barbara Mahler, Oxford	Contagion Maps for Manifold Learning
	Patrick Kidger, Oxford	Universal Approximation - Transposed!
	Haoran Ni , Warwick	Numerical Estimation of Information Measures

Optimisation

Keynote speaker:	Peter Richtarik	On Second Order Methods and Randomness
	KAUST	
Session Chair:	Simon Vary, Oxford	
Session speakers:	Louis Sharrock, Imperial	Two-Timescale Stochastic Approximation in Continuous Time with Applications to Joint Online Parameter Estimation and Optimal Sensor Placement
	Nash Treetanthi, Oxford	Uncertainty aversion in Multi-armed bandit problem
	Florentin Goyens, Oxford	Nonlinear matrix recovery
	Vadim Platonov, Edimburgh	Forward utilities and Mean-field games underrelative performance concerns
	Melanie Beckerleg, Oxford	Binary Matrix Completion for Recommender Systems, with applications to Drug Discovery

Applications of machine learning in life sciences

Keynote speaker:	Carola Schönlieb	Hybrid mathematical and machine learning methods for solving inverse imaging problems - getting the best from both worlds
	University of Cambridge	
Session Chair:	Connah Johnson, Warwick	
Sessionn speakers:	Tamara Grossman, Cambridge	Deeply Learned Spectral Total Variation Decomposition
	Lancelot Da-Costa, Imperial	A global brain theory, stochastic thermodynamics and applications to autonomous behaviour
	Laura Guzmán Rincón, Warwick	Outbreak detection using Bayesian hierarchical modelling and Gaussian random fields

Bayesian methods

Keynote speaker:	Alexandre Bouchard-Côté	Scalable approximation of integrals using non-reversible methods
	University of British Columbia	
Session Chair:	Torben Sell, Cambridge	
Session speakers:	Henry Moss, Lancaster	BOSH: Bayesian Optimisation Sampled Hierarchically
	Sam Power, Cambridge	Accelerated Sampling on Discrete Spaces with Non-Reversible Markov Processes
	Riccardo Barbano, UCL	Quantifying Model-Uncertainty in Inverse Problems via Bayesian Deep Gradient Descent