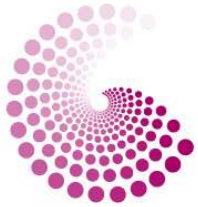
PROGRAMME

3RD IMA AND OR SOCIETY CONFERENCE ON MATHEMATICS OF OPERATIONAL RESEARCH

20-23 APRIL 2021, ONLINE EVENT



Institute of mathematics & its applications

THE OPERATIONAL RESEARCH SOCIETY

Smith institute for Industrial Mathematics and System Engineering

The Alan Turing Institute

Day One - Tuesday 20 April

	Main Room	Breakout Room 1	Breakout Room 2	Breakout Room 3
10.30	Welcome, Housekeeping and Logistics			
10.45	Opening Speech – Professor Edmund Burke and Dr Nira Chamberlain			
11.00	Invited Talk - Jakob Blaavand			
12.00	Quickfire Poster Presentations			
13.00	Lunch Break/Poster Session via Spatial.chat			
14.00		**Multi-Armed Bandits** Optimal Discrete Search with a Map – *Edward Mellor* Evaluation and Mitigation of Estimation Bias of the Bayesian Beta-Bernoulli Two-armed Bandit Problem with Binary Responses – *Amin Yarahmadi* The Border Patrol Game – *Matthew Darlington* Online Binary Classification with Partial Feedback – *James Grant*	**Network Optimisation** An Improved Approximation Algorithm for the Inventory Routing Problem – *Neil Olver* Parameterized Algorithms for Network Design – *Ramanujan Sridharan* Higher-order Clustering of Directed Graphs – *He Sun* Cost-effective maximisation of influence in a network – *Justin Ward*	**Optimising Emergency Management** Designing a resilient food supply network for natural disaster responses in West Java: a simulation-optimization approach – *Duc-Cuong Dang* Modelling and solving the assisted-evacuation problem with risk, efficiency, and fairness considerations – *Aleksandr Pirogov* Modelling emergency medical services in Indonesia – *Paul Harper* Shelter location and evacuation routing: challenges and opportunities for OR – *Annunziata Esposito Amideo*
16.00	Networking Session via Spatial.chat			
17.00	Closing Remarks and Thanks			

Day Two – Wednesday 21 April

	Main Room	Breakout Room 1	Breakout Room 2	Breakout Room 3
9.45	Welcome, Housekeeping and Logistics			
10.00	Keynote Talk - Kevin Glazebrook and Jake Clarkson			
11.00		**Theory of Discrete Optimisation I** Distance-sparsity transference for vertices of corner polyhedra – *Martin Henk* The lattice of cycles of an undirected graph – *Gennadiy Averkov* Complexity of linear relaxations in integer programming – *Matthias Schymura* Proximity bounds for random integer programs – *Marcel Celaya*	**Optimisation in Machine Learning I** SQP for equality constrained stochastic optimization – *Albert S. Berahas* Constrained and composite optimization via adaptive sampling methods – *Raghu Bollapragada* From local SGD to local fixed-point methods for federated learning – *Laurent Condat* Avoiding local minima in multi-layer network optimization by incremental training – *Giampaolo Luizzi*	**Applications and Development of Simulation** How many simulations do you need? Clinical trial scheduling with an adaptive rollout algorithm – *Juergen Branke* Guiding Data Collection to Minimise Input Uncertainty – *Drupad Parmar* Predicting the Need for Renal Replacement Therapy Using a Discrete Time Markov Chain Model – *Christine Currie* Reducing and Calibrating for Input Model Bias in Computer Simulation– *Dr Lucy Morgan*
13.00	Lunch Break/WORAN (Women in OR and Analytics Network) Panel			

14.00		**Theory of Discrete Optimisation II** Concrete complexity bounds for optimizing over integers – *Amitabh Basu* Approximating nonlinear integer programs with monomial orders – *Gupte Akshay* Short simplex paths in lattice polytopes – *Carla Michini* Ideal clutters and dyadic fractional packing – *Ahmad Abdi*	**Optimisation in Machine Learning II** Stochastic Newton and cubic Newton methods with simple local linear-quadratic rates – *Peter Richtarik* A subspace acceleration method for minimization involving a group sparsity-inducing regularizer – *Daniel Robinson* A distributed cubic-regularized Newton method for smooth convex optimization over networks – *Cesar A Uribe* Provably efficient algorithms for reinforcement learning with nonlinear function approximation – *Hoi-To Wai*	**First and Second Order Methods** A purely numerical linear algebra view on ADMM – *Stefano Cipolla* Stochastic Proximal Alternating Minimization for Non-smooth and Non-convex Optimization – *Jinhwei Liang* An interior point-proximal method of multipliers for convex quadratic programming – *Spyridon Pougkakiotis* FISTA variants on nonconvex composite optimisation problems – *Chee Kian Sim*
16.00	Networking Session via Spatial.chat			
17.00	Closing Remarks and Thanks			

Day Three – Thursday 22 April

	Main Room	Breakout Room 1	Breakout Room 2	Breakout Room 3
9.45	Welcome, Housekeeping and Logistics			
10.00	Keynote Talk - Christina Pagel			
11.00	Break			
11.15		**CCO I** Dynamic string-averaging CQ-methods for the split feasibility problem with percentage volume constraints arising in radiation therapy treatment planning – *Aviv Gibali* Generalized Self-Concordant Analysis of Frank-Wolfe algorithms – *Mathias Staudigl* General higher-order majorization-minimization algorithms for optimization – *Ion Necoara*	**Bilevel Optimisation** Algorithms to solve bilevel knapsack problems – *Ashwin Arulselvan* Bilevel hyperparameter optimization for RFB kernel support vector machines – *Anthony Dunn* Sufficient optimality conditions in bilevel programming – *Alain Zemkoho*	**Freight Transport** Vehicle routing for pickup and delivery routing for split orders and cross docks - *Mike Flynn, Chris N. Potts, Antonio Martinez-Sykora* The two-echelon vehicle routing problem with portering in urban logistics - *Lais Wehbi and Cagatay Iris* The truck-porters routing problem - *Mohammed Alammar, Antonio Martinez Sykora, Chris Potts, Stefano Coniglio*
12.45	Lunch Break/Poster Session via Spatial.chat			

13.45		**CCO II** Inexact high-order proximal-point methods for convex composite optimization – *Masoud Ahookhosh* New demiclosedness principle for cocoercive mappings with application to the adaptive Douglas–Rachford – *Ruben Campoy* Variational Inequalities Governed By Strongly Pseudomonotone Operators - *Pham Duy Khanh*	**Turing Sessions on Data Science I** Mapping biology between species using transfer learning – *Ben D MacArthur* Scaling up neural network verification – *Pawan Kumar* Flexible autonomy for human swarm teaming – *Gopal Ramchurn*	**Airport Capacity** A multi-criteria decision-making framework for generating and assessing airport schedules. *Fotios Katsigiannis* Adaptive large neighbourhood search for single airport slot allocation problems. *Sha Wang* A new stochastic optimisation framework for airport slot allocation. *Jamie Fairbrother and Robert Shone*
15.15	Break			
15.30		**CCO III** Two Novel Primal-Dual Algorithms for Solving Convex-Concave Saddle-Point Problems with Convex-Linear Coupling Term -*Quoc Tran- Dinh* Reflected Three-Operator Splitting Method for Monotone Inclusion Problem – *Yekini Shehu*	**Turing Sessions on Data Science II** Optimising blood pressure measurements strategies via Monte Carlo techniques – *Francesco Shankar* Directed persistent homology – *Ruben Sanchez-Garcia* Machine learning of seismicity induced by hydraulic fracturing – *Dr Thomas Gernon*	**Dynamic Resource Allocation** Whittle index based Q-learning for restless bandits with average reward – *Konstantin Avrachenkov* An Approximation Approach for Response-Adaptive Clinical Trial Design – *Vishal Ahuja* The Finite-Horizon Two-Armed Bandit Problem with Binary Responses – *Peter Jacko*
17.00	Closing Remarks and Thanks			

Day Four – Friday 23 April

	Main Room	Breakout Room 1	Breakout Room 2	Breakout Room 3
9.45	Introduction			
10.00	Keynote Talk - Dolores Romero Morales			
11.00		**Data Driven Decision Making** Clustering & Interpreting Via means of mathematical optimization – *Kseniia Kurishchenko* Mathematical Optimization for counterfactual machine learning – *Jasone Ramirez Ayerbe* Fair Optimal Randomized Regression Trees – *Cristina Molero- Rio* A Semidefinite programming approach to constrained smoothing and out-of-range prediction using cubic P-splines – *Vanesa Guerreo*	**Routing/Logistics** Increasing electric vehicle adoption via optimal deployment of charging stations - *Miguel Anjos* A multi-objective rolling horizon personnel routing and scheduling model for large-scale natural disasters- *Istenc Tarhan* A clustered assignment and routing problem for the multiple-product distribution in the humanitarian aid - *Antonia Ilabaca* A bi-level optimization model for determining an integrated optimal pricing, sizing, and location of electric vehicle charging stations - *Alemseged Weldeyesus*	**Multilevel Energy Transmission** Global optimization for the multilevel European gas market system - *Lars Schewe* Powering the energy transition: optimal storage operations in imperfectly competitive electricity markets - *Martin Weibelzahl* A black-box optimization approach to assess the economic benefits of increasing transformer ratings - *Petra Bartmeyer*
13.00	Lunch Break/Poster Session via Spatial.chat			

14.00		**OR Applications I** Game of Banks – keeping free ATMs alive? - *Tri-Dung Nguyen* Sequential attacks of a single target- *Jake Clarkson*	**OR Applications II** Detecting outlier demand in revenue management networks - *Nicola Rennie* A data-driven method for the optimal transmission switching problem - *Juncheng Li*	**Optimisation** New multi-step conjugate gradient method for unconstrained optimization -*Issam A.R. Moghrabi* Decomposition methods for maximizing a submodular function combined with a set-union operator - *Stefano Coniglio* Mixed-integer quadratic programming: a hierarchy of formulations - *Laura Galli*
15.30	Break			
16.00	Keynote Talk - Nick Harris			
17.00	Closing Remarks and Thanks			

Poster Submissions

Kholood Alyazidi (Durham University)- Nonparametric predictive inference for inventory decisions.

Marie Baratto (University of Liège)- Selecting directed cycles: a polyhedral study

Ben Black (Lancaster University)- Distributionally robust resource planning

Luigi Bobbio (University of Southampton)- Routing and trajectory optimisation of unmanned aerial vehicles

Thu Huong Dang – (Lancaster University)- Fast Upper Bounds for a Large-Scale Real-World Arc Routing Problem

Joshua Liu (Lancaster University)- An integrated method for estimation and optimisation for newsvendor problems

Livia Stark (Lancaster University)- Evaluation of sources of intelligence using a multi-armed bandit framework

Elizabeth Williams (Cardiff University)- Multi-site and multi-service modelling for elderly and frail patients