4th IMA and OR Society Conference on Mathematics of Operational Research

PROGRAMME
27-28 April 2023

Institute of mathematics & its applications

26th April – Buffet/Networking night (Pre-book) 7pm, Courtyard Restaurant Conference Aston

DAY ONE- Thursday 27th April

Thursday	Main Room	R1	R2	R3	R4	R5	R6
08:45	Registration. Tea and coffee on arrival						
09:30	Welcome						
09:45	Plenary 1: Paul Harper - Transforming Emergency and Urgent Care Services with OR						
10:45	Parallel Sessions	**Stoch Dyn Optim I** Capacity management for a leasing system with different equipment and batch demands, *Wen Jiao*	**Cutting and Packing** Procedural bilevel programming: applications to the bin packing problem, *Antonio Martinez-Sykora*	**Supply Chains** Rolling Horizon Scheduling of Biopharmaceutical Therapies via a Two-Step Lookahead Heuristic, *Siamak Naderi*	**Stochastic Optimisation** Downside loss management in inventory control: Minimization of conditional value-at-risk via a non-parametric feature-based approach, *Joshua Liu*	**Forecasting and Retailing** Optimising in-store price reductions, *Katie Howgate*	**Combinatorial Optim I** Capacity planning of healthcare outsourcing network under uncertainty, *Xuan Vinh Doan*
11:15		Shifting demands and sharing savings in service delivery to minimize emission cost , *Jiyin Liu*	Voxel-Based Solution Approaches to the Three-Dimensional Irregular Packing Problem, *Carols Lamas Ferandez*	Decomposition of large-scale MILP supply chain models using convolutional neural networks, *Niki Triantafyllou*	Working force planning with stochastic turn over, *Zhen Chen*	Intermittent demand forecasting for final purchase decisions, *Robyn Goldsmith*	A two-time-level model for mission and flight planning of an inhomogeneous fleet of unmanned aerial vehicles, *Johannes Schmidt*
11:45		Index Policies for Campaign Promotion Strategies in Reward-based Crowed funding, *Dong Li*	Intelligent 3D Tire Packing Algorithm, *Huan Yu*		Problem-driven scenario generation for stochastic programming: two recent approaches, *Jamie Fairbrother*		Polyhedral structure of RLT relaxations of nonconvex quadratic programs and their implications on exact and inexact relaxations, *E. Alper Yildirim*
12:15	Lunch						
14:00	Parallel Sessions	**Multi-Obj Comb Opt I** Restaurant Meal Delivery Problem with Order Bundling Allocation and Fairness, *Ke Fang*	**Global Optimisation** Solving MINLPs to Global Optimality with FICO Xpress Global, *Tristan Gally*	**Defence** Historical Analysis in U.K. Defence, *Colin Irwin*	**Stochastic Modelling** Merging tree-based rules and discretizations for intrinsically interpretable credit scoring, *Belen Martin Barragan*	**Combinatorial Optim II** On exact and inexact RLT and SDP-RLT relaxations of nonconvex box-constrained quadratic programs, *Yuzhou Qiu*	**Scheduling I** Mathematical programming for scheduling telemedicine appointments, *Charlotte Marshall*
14:30		A Generic Approach for Conference Scheduling with Integer Programming, *Yaro Pylyavskyy*	How I Learned to Stop Worrying and Love Parameters, *Ruth Misener*	Human Factors for Human-in-the-Loop Tactical Engagement, *Sarah Jane Stapleton*	Bandit procedures for designing patient-centric clinical trials,*Peter Jacko*	Matching markets with middlemen, *Tamas Solymosi*	A flow shop problem with a batch processing machine and transportation, *Nacira Chikhi*
15:00		Modelling and Solving the Two-Echelon Location-Routing Problem with Different Intermediate Facilities, *Rebecca Hamm*	Reduced-space formulation for deterministic global optimization in process engineering, *Chrysoula Kappatou*	Analytical Strategic Wargaming – A Developing Method, *Chris Halms*	Online optimisation for ambulance routing in disaster response with partial or no information on victim conditions, *Davood Shiri*	Computing balanced solutions for large international kidney exchange schemes, *Marton Benedek*	
15:30	Break						
15:45	Plenary 2: Nira Chamberlain - Strategic Modelling: The Challenges of OR in an Increasingly Data-Driven World						
16:45	Break						
17:00	WORAN EDI session: What could mentoring do for you? (Sponsored by Simul8)						
17:30							
18:00							
18:30	Posters and Drinks Reception						
19:00							
19:30	Dinner with after dinner speakers - Courtyard Restaurant at Conference Aston						

DAY TWO – Friday 28th April

Friday	Main Room	R1	R2	R3	R4	R5	R6
08:30	Plenary 3: Corina Constantinescu						
09:30	Break						
09:45	Parallel Sessions	**Stoch Dyn Optim II** Stochastic Runway Scheduling using Simheuristics, *Rob Shone*	**Simulation & Stoch Mod** An Introduction to Semiparametric Choice Models, *Selin Ahipasaoglu*	**Logistics & Transportation** Two-echelon distribution network design with Collaboration among carriers, *I.G Dogan*	**Finance: Risk**	**Finance: Control and Game Theory** Smart products and R&D: effects of the option to update, *Nick Huberts*	Update on National Academy
10:15		pproximate Dynamic Programming for the Maintenance of Controlled Network Infrastructure, *Luke Fairley*	Utilising SimPy and Process Mining to Develop an Automated Symbiotic Simulation, *Alex Heib*	Mobility as a Service: Personalised multi-modal journey planning and optimisation, *C Bayliss*	Understanding the demand for inclusive insurance: a pilot study in Canada, *Ida Ferrara*	Game options under proportional transaction costs, *Alet Roux*	
10:45		Dynamic Allocation of Mobile Servers in a Network, *Tian Dongnuan*	Pricing Optimisation for Car Share Schemes, *Christine Currie*	Handling User-based Relocations in One-way Carsharing Systems considering user acceptance rates, *Burak Boyaci*	A Machine Learning Approach for Micro-Credit Scoring, *Paresh Date*	Strategic Investment under Uncertainty: Second Mover Advantage in Duopoly, *Jacco Thijssen*	
11:15		A Stackelberg Game for Empty Container Sharing under a Carbon Tax Policy, *Haoyu Wang*	Empirical Evaluation of Simulation-based Digital Twin Decisions, *Luke Rhodes-Leader*	A Construction Heuristic for a Time - Constrained Mixed - Mode Two - Echelon Vehicle Routing Problem With Scheduling , *Andy Oakey*	Microfinance interest rates: Using mutually excited processes to determine microfinance loan and portfolio risk, *Deol Jugraj*	The Impact of Ambiguity over signal on optmal investment timing and welfare, *Laura Delaney*	
11:45	Break						
12:00	Plenary 4: Joerg Fliege - Unmanned Aerial Vehicles: Opportunities for Operational Research						
13:00	Lunch						
14:00	Parallel Sessions	**Multi-Obj Comb Opt II** A Mathematical Programming Formulation for the Walking School Bus: Bradford Case Study, *Leena Ahmed*	**Discrete Optimisation** Augmentation search for integer programmes defined on polyhedra, *Tolga Bektas*	**OR Applications** Rostering staff with network design models, *Hamish Thorburn*	**Maths of OR I** Solution approaches to the three-index assignment problem, Mohamed Mehbali	**Scheduling II**, A multi-target dynamic scheduling approach for VTOLs involving piecewise linearization of value functions,*Viktoriya Nikitina*	**Maths of OR II,** Survey of some subdivisions and triangulations of polytopes,*Sammani Abdullahi*
14:30		Exploring the Optimal Camera Placement Problem and its Relationship with the Set Covering Problem, *Malek Almousa*	On Upper Bounds for the Multiple Knapsack Problem, *Adam Letchford*	Integrated forecasting and inventory management for perishable products in retailing, *Anna-Lena Sachs*	Distributed Algorithms for U-statistics-based Empirical Risk Minimization, *Alan Wan*	An evolutionary heuristic for solving the robust single airport slot allocation problem,*Aleksandr Pirogov*	
15:00		Walking School Bus Line Routing for Efficiency, Health and Walkability: A Multi-objective Optimisation Approach, *Matthias Ehrgott*	Approximating integer programs with monomial orders, *Akshay Gupte*	Packing and routing: an integrated model, *Joshua Liu*	Autonomous navigation of unmanned aerial vehicles (UAVs) for border patrolling: a stochastic approach, *Busra Biskin*	A hyper-heuristic algorithm for airport slot allocation,*Theodoti Kerama*	
15:30	Break						
15:45	Plenary 5: Julia Bennell - Packing of Irregular Shapes in Two and Three Dimensions						
16:45	Close						

POSTERS

Online restaurant meal delivery problem with order bundling and assignment fairness, *Ke Fang*
How hybrid learning increases the size of educational timetabling problems but not the difficulty, *Matthew Davison*
Insertion heuristics for a class of dynamic vehicle routing problems, *Matthew Ian Charles Randall*
A new data-driven uncertainty set using clustering, *Alireza Yazdani Esfidvajani*
Robust return-risk optimization models with proportional transaction costs, *E.F.E Atta Mills*
Lower bounds for the permutation flowshop scheduling problem, *Sebastian E. Caceres-Gelvez*

National Academy

The Academy for the Mathematical Sciences (AcadMathSci: https://www.acadmathsci.org.uk/) will be an authoritative and persuasive voice for the whole of the mathematical sciences. We will work together to develop, communicate, teach and use the power of the mathematical sciences to benefit our world. This includes teaching and education, academic research pushing the frontiers of what is known, and the implementation of mathematics in practice. The Academy will be dedicated to supporting the advancement of the field ensuring that it delivers on its potential to enrich our world, by nurturing the people pipeline, and increasing societal engagement and recognition of the value, and indeed beauty, of mathematics. We know that the mathematical sciences improve lives, help people, help society, and improve the economy and productivity.

WORAN

EDI WORAN Panel: What could mentoring do for you? (Sponsored by SIMUL8 https://www.simul8.com/)

This interactive panel session will discuss the benefits of mentoring for academics and practitioners in Maths-oriented careers. Our invited panellists will discuss their experiences with mentoring and answer questions posed by the audience. The session will end with a mini "speed dating" networking event for everyone to talk to each other and to meet panel members. Participants will leave with ideas and reflections about their own personal mentoring journey. The session is open to all genders.

Conference delegates can ask their questions and upvote other delegates' questions on www.Slido.com using code # IMA-OR.

Panel Chair: Antuela Tako, Loughborough University

Panellists: Nira Chamberlain (SNC-Lavalin Group Inc); Corina Constantinescu (University of Liverpool); Jennifer Morrell (Corporate member of the OR Society and will be by April Vice President Industry for the IMA) and Selin Ahipasaoglu (Southampton University).