Day 3 (Wednesday, 29 June) Programme

8:30 – 9:15 (29 June), Beveridge Hall

Neyman Lecture by Heping Zhang, Yale University
Genes, Brain, and Us
Chair: Piotr Fryzlewicz, London School of Economics

9:20 – 10:05 (29 June), Rooms G22 & G26

Medallion Lecture by Vlada Limic, University of Strasbourg
Multiplicative Coalescent Related Processes
Chair: Adam Jakubowski, University of Torun

9:20 – 10:05 (29 June), Beveridge Hall

Medallion Lecture by Roman Vershynin, University of California, Irvine
Privacy, Probability, and Synthetic Data
Chair: Andreas Kyprianou, University of Bath

10:05 – 10:30: Tea break

10:30 – 12:30 (29 June), Room G11

IP14: Financial Mathematics
Chair: Caroline Hillairet, ENSAE Paris
Some Principles of Cooperative Pricing in Insurance
Delia Coculescu, University of Zurich
Title TBA
Roxana Dumitrescu, Kings College London
Title TBA
Mohamed Mrad, Universite Sorbonne Paris Nord
Regression-Based Simulation Schemes for a Class of Anticipated BSDEs and XVA Application
Wissal Sabbagh, Ensae Paris, CREST

10:30 – 12:30 (29 June), Room G04

IP16: Rough Path Theory, Signatures and Applications
Chair: Thomas Cass, Imperial College London
Regularity Structures and Machine Learning
Ilya Chevyrev, University of Edinburgh
Framing RNN as a Kernel Method: A Neural ODE Approach
Adeline Fermanian, Sorbonne University
Non-degeneracy of Stochastic Line Integrals
Xi Geng, University of Melbourne
Higher Order Kernel Mean Embeddings to Capture Filtrations of Stochastic Processes
Maud Lemercier, University of Warwick

10:30 – 12:30 (29 June), Room G05

IP19: Stochastic Processes, Extremes and Risk
Chair: Clement Dombry, University of Besancon
High dimensional inference for stochastic differential equations
Mark Podolskij, Universite du Luxembourg
Path diagrams for multivariate stochastic processes in continuous time
Lea Schenk, Karlsruhe Institute of Technology
Extremal Processes of Spatial Branching Structures
Bastien Mallein, Universite Sorbonne Paris Nord

Palm Theory for Extremes of Stationary Time Series
Hrvoje Planinic, University of Zagreb

10:30 – 12:30 (29 June), Room G07
IP20: Levy Processes: Recent Advances in Theory and Applications
Chair: Aleks Mijatovic, University of Warwick
When is the Convex Minorant of a Lévy Process Smooth?
Jorge Gonzlez Cazares, University of Warwick
Creeping of Lévy Processes through Curves
Loic Chaumont, Universit d'Angers
How Smooth can the Convex Hull of a Lévy Path be?
David Bang, University of Warwick
A Meyer-Ito Formula for Stable Processes via Fractional Calculus
Geronimo Uribe Bravo, Universidad Nacional Autonoma deMexico

10:30 – 12:30 (29 June), Chancellors Hall
IS5: Differential Privacy
Chair: Angelika Rohde, University of Freiburg
Near Instance-Optimality in Differential Privacy
Hilal Asi, Stanford University
Title TBA
Cristina Butucea, ENSAE, Paris
The Power of Private Likelihood-ratio Tests for Goodness-of-fit in Frequency Tables
Stefano Favaro, University of Torino
Network Change-point Detection under Local Differential Privacy
Mengchu Li, University of Warwick

10:30 – 12:30 (29 June), Room G22
IS6: Bayesian Computation
Chair: Arnaud Doucet, University of Oxford
Monotonic Alpha-divergence Minimisation for Variational Inference
Kamélia Daudel, University of Oxford
Sequential Monte Carlo Algorithms for Agent-based Models of Disease Transmission
Jeremy Heng, ESSEC Singapore
High-dimensional MCMC Analysis: from Diffusions to Dirichlet Forms
Ning Ning, University of Michigan
Accelerated Sampling on Discrete Spaces with Non-Reversible Markov Jump Processes
Samuel Power, Bristol University

10:30 – 12:30 (29 June), Room G26
IS21: Modern Approaches to Missing Data
Chair: Richard Samworth, University of Cambridge
Optimal nonparametric testing of Missing Completely at Random, and its connections to compatibility
Thomas B. Berrett, University of Warwick
Inference for Heteroskedastic PCA with Missing Data
Yuxin Chen, University of Pennsylvania
Supervised Learning with Missing Values
Julie Josse, Inria
High-dimensional Changepoint Estimation with Heterogeneous Missingness
Tengyao Wang, London School of Economics

10:30 – 12:30 (29 June), Room G03

CTS5: Bayesian Inference
Chair: Konstantinos Kalogeropoulos, London School of Economics
Stochastic Approximation techniques for Bayesian uncertainty directed trial designs
Sandra Fortini, University of Bocconi
Robust Estimation in the Regression Setting
Yannick Baraud, University of Luxembourg
Robust Estimation of a Regression Function in Exponential Families
Juntong Chen, University of Luxembourg
Sequential Bayesian Learning for Hidden Semi-Markov Models
Patrick Aschermayr, London School of Economics
Sequential Learning and Economic Benefits from Dynamic Term Structure Models
Konstantinos Kalogeropoulos, London School of Economics

10:30 – 12:30 (29 June), Room G16

CTS7: Functional data – Theory and Methods
Chair: Jongmin Lee, Seoul National University
Nonparametric Estimation of Covariance and Autocovariance Operators on the Sphere
Alessia Caponera, EPFL, alessia.caponera@epfl.ch
Equivariant Estimation of Frechet Means
Andrew McCormack, Duke University
Learning the regularity of curves in functional data analysis and applications
Valentin Patilea, CREST, Ensai
Robust spherical principal curves
Jongmin Lee, Seoul National University

12:30 – 13:30 (29 June): Lunch

13:30 – 15:30 (29 June), Room G03

IP15: Insurance Mathematics
Chair: Mogens Steffensen, University of Copenhagen
Title TBA
Corina Constantinescu, University of Liverpool
Climate Risk Management and Insurance
Enrico Bis, Imperial College London
When Insurance Gets Exciting
Roger Laeven, Amsterdam School of Economics
Equilibrium Investment with Random Risk Aversion
Mogens Steensen, University of Copenhagen

13:30 – 15:30 (29 June), Room G04

IP17: Stochastic Models in Fluid Dynamics
Chair: Oana Lang, Imperial College London
High order numerical schemes in time for stochastic models in ocean dynamics
Camilla Fiorini, Conservatoire National des Arts et Metiers, M2N Laboratory, Paris
LDP and CLT for scaling limit of SPDEs with transport noise
Lucio Galeati, University of Bonn
Numerical Data Assimilation for Stochastic Advection by Lie Transport Models
Wei Pan, Imperial College London
On Maximal Solutions for a Stochastic Shallow Water Model
Oana Lang, Imperial College London

13:30 – 15:30 (29 June), Room G05

IP18: Stochastics Interacting Systems
Chair: Daniel Valesin, University of Warwick
Slow Mixing and Cut-off in Spin Plaquette Models
Paul Chleboun, University of Warwick
Contact process on the random hyperbolic graph
Bruno Schapira, Aix-Marseille Universite
Algebraic approach to stochastic duality for Markov processes
Chiara Franceschini, Modena University
Dynamical noise sensitivity for the voter model
Rangel Baldasso, Leiden University

13:30 – 15:30 (29 June), Room G16

IP21: Regularization by Noise
Chair: Oleg Butkovsky, Weierstrass Institute Berlin
Regularisation of rough and almost critical SDEs
Mate Gerencser, TU Wien
Three applications of stochastic sewing to regularization by noise
Nicolas Perkowski, Free University Berlin
Uniqueness for nonlinear Fokker-Planck equations and for McKean-Vlasov SDEs: the degenerate case
Michael Rockner, University of Bielefeld
Non-explosion by Stratonovich noise for ODEs
Mario Maurelli, Università degli Studi di Milano

13:30 – 15:30 (29 June), Room G22

IS16: New Developments in High-Dimensional Learning and Nonparametric Inference
Organizer: Jinchi Lv, University of Southern California
Chair: Yingying Fan, University of Southern California
Optimal rates for Robust Deep Learning
Jianqing Fan, Princeton University
Optimal Subgroup Selection
Richard Samworth, University of Cambridge
Rank-constrained least-squares: Prediction and inference
Ziwei Zhu, University of Michigan
Asymptotic Properties of High-Dimensional Random Forests
Yingying Fan, University of Southern California

13:30 – 15:30 (29 June), Room G07

IS18: Quantum Computing and Statistics
Chair: Yazhen Wang, University of Wisconsin-Madison
Bell's theorem as a no-go result in classical distributed Monte-Carlo simulation
Richard Gill, Leiden University
Statistical Aspects of the Quantum Supremacy Demonstration
Yosef Rinott, Hebrew University of Jerusalem
Quantum algorithms for nonconvex optimization: Escaping from saddle points and beyond
Tongyang Li, Peking University
Quantum Annealing via Path-Integral Monte Carlo with Data Augmentation
Jianchang Hu and Yazhen Wang, University of Wisconsin-Madison

13:30 – 15:30 (29 June), Room G26

IS20: Inference Methods for Adaptively Collected Data
Organizer: Kelly Zhang, Harvard University
Chair: Susan Murphy, Harvard University
Treatment Allocation with Strategic Agents
Evan Munro, Stanford University
Post-Contextual-Bandit Inference
Nathan Kallus, Cornell University
Near-optimal Inference in Adaptive Linear Regression
Koulik Khamaru, University of California, Berkeley
Statistical Inference After Adaptive Sampling in Non-Markovian Environments
Kelly Zhang, Harvard University

13:30 – 15:30 (29 June), Room G11
IS30: Prediction and Sampling with Deep Neural Networks
Chair: Jian Huang, University of Iowa
Probabilistic Forecasting with Conditional Generative Networks via Scoring Rule Minimisation
Ritabrata Dutta, University of Warwick
Inference and Learning in Infinite Dimensions: Insights from Optimal Transport
Tengyuan Liang, University of Chicago
Bayesian Learning via Neural Schrödinger-Föllmer Flows
Francisco Vargas, Cambridge University
Causal Probabilistic Spatio-temporal Fusion Transformers in Two-sided Ride-Hailing Markets
Hongtu Zhu, University of North Carolina Chapel Hill

15:30 – 16:00 (29 June): Tea break

16:00 – 17:40 (29 June), Room G03
CTS8: Risk, Insurance and Finance
Chair: Alejandra Quintos, Columbia University
Aggregated Markov Chain Models in Life Insurance: Properties and Valuation
Jamaal Ahmad, University of Copenhagen
Multi-asset optimal execution and statistical arbitrage strategies under Ornstein-Uhlenbeck dynamics
Fayçal Drissi, Université Paris 1
Optimal make-take fees in a shared order book
Philippe Bergault, Ecole Polytechnique
Dependent Stopping Times and an Application to Credit Risk Theory
Alejandra Quintos, Columbia University

16:00 – 17:40 (29 June), Room G04
CTS9: Stochastic Analysis
Chair: Andreas Sojmark, London School of Economics, a.sojmark@lse.ac.uk
Asymptotic properties of measure-valued Pólya urn processes
Hristo Sariev, Bulgarian Academy of Sciences
Robuts super-replication with transaction costs for continuous processes
Huy Chau, University of Manchester
Covering systems of congruences
Robert Hough, Stony Brook University
Continuous time random walks and convergence of their stochastic integrals
Andreas Sojmark, London School of Economics

16:00 – 17:40 (29 June), Room G05

CTS10: Time Series

Chair: Filippo Pellegrino, London School of Economics

Time Series Analysis for Interval-Valued Data

Lynne Billard, University of Georgia

Modelling and Inference for Discrete Time-series using Bayesian Context Trees

Ioannis Papageorgiou, University of Cambridge

Semi-supervised clustering of time-dependent categorical sequences under positive constraints

Igor Melnykov, University of Minnesota Duluth

Factor-augmented tree ensembles

Filippo Pellegrino, London School of Economics

16:00 – 17:40 (29 June), Room G07

CTS11: State Space Models

Chair: Thomas Hotz, TU Ilmenau

Robust estimation in finite state space hidden Markov models

Alexandre Lecestre, University of Luxembourg

On the Observability of State Space Models with Gaussian Errors and unknown Variance

Ariane Hanebeck, Technische Universität München, ariane.hanebeck@tum.de

A lagged particle filter for stable filtering of certain high-dimensional state-space models

Hamza Ruzayqat, King Abdullah University of Science and Technology

State space models as a flexible framework for monitoring epidemics

Thomas Hotz, TU Ilmenau

16:00 – 17:40 (29 June), Room G11

CTS12: Random Graph and Networks

Chair: Giorgos Minas, University of St Andrews

Fluctuations of subgraph counts in graphon based random graphs

Anirban Chatterjee, University of Pennsylvania

Community Detection with Contextual Multilayer Networks

Sagnik Nandy, University of Pennsylvania

Subsampling Based Community Detection for Large Networks

Sayan Chakrabarty, University of Illinois at Urbana Champaign

Population-level Balance in Signed Networks

Weijing Tang, University of Michigan

Stochastic simulation, analysis and inference for reaction networks

Giorgos Minas, University of St Andrews,

16:00 – 17:40 (29 June), Room G16

CTS13: Causal Inference

Chair: Nils Sturma, Technical University of Munich

Causal survival analysis from theory to practice

Imke Mayer, Charité – Universitätsmedizin Berlin

A Semiparametric Method for Evaluating Causal Effects in the Presence of Error-Prone Covariates

Jianxuan Liu, Syracuse University

Causal Regularization: On the trade-off between in-sample and out-of-sample risk guarantees

Lucas Kania, Carnegie Mellon University

Half-Trek Criterion for Identifiability of Latent Variable Models

Nils Sturma, Technical University of Munich

16:00 – 17:40 (29 June), Room G22

CTS14: Advanced Theoretical Statistics

Chair: Patrick Rebeschini, University of Oxford

Calibrating the scan statistic: finite sample performance vs. asymptotics

Guenther Walther, Stanford University

Minimax Rates for Conditional Density Estimation via Empirical Entropy

Blair Bilodeau, University of Toronto

Finite mixture models: a bridge with stochastic geometry and Choquet theory

Michele Caprio, Duke University

Robust estimation under a shape constraint

Hélène Halconruy, University of Luxembourg

Concentration without Bernstein

Patrick Rebeschini, University of Oxford

16:00 – 17:40 (29 June), Room G26

CTS15: Genetics

Chair: William Rosenberger, George Mason University

A new phylogenetic association test based on a Chinese Restaurant Process model

Julie Zhang, Stanford University

Modelling biomarker variability in joint analysis of longitudinal and time-to-event data

Chunyu Wang, University of Manchester

Data-driven design of targeted gene panels for estimating immunotherapy biomarkers

Jacob Bradley, University of Edinburgh

Two-Stage Enrichment Designs With a Continuous Biomarker

William Rosenberger, George Mason University

19:00 – 21:00 (29 June), Conference Dinner

Senior Common Room
5th Floor, Old Building
London School of Economics and Political Science
Houghton Street
London WC2A 2AE