

SCML 2026 Conference Programme

University of Bath, 14-17 September

All activities except the conference dinner take place in the Chancellor's Building, in the Level 2 foyer and rooms 2.6, 3.1 and 3.5

Monday 14 September		
Time & Venue	Speaker	Title
09.45 – 10.45	All	Arrival and coffee in the Level 2 foyer
10.45 – 11.00 2.6	Organising committee	Welcome
11.00 – 11.40 2.6	Domènec Ruiz-Balet	Invited talk - Constructive Conditional Normalizing flows
11.45 – 12.45 2.6	Yuka Hashimoto	Tutorial 1 - C*-algebra for machine learning - applying C*-algebras to kernel methods and neural networks
12.45 – 14.15	All	Lunch in the Level 2 foyer
14.15 – 15.15 2.6	Kirstine Dale	Keynote 1 - Forecasting the Future: Embedding AI in the UK's Weather Service
15.15 – 15.45	All	Coffee in the Level 2 foyer
15.45 – 16.45		Contributor talks (3 parallel, 20 mins per talk)
2.6	Alan Muriithi Anees Hussain Ashima Kalathingal	Parameter-wise Functional Sensitivity for Subnetwork Identification in Neural Networks Neural Operator Learning Infrastructure with Rust Physics Informed Machine Learning for Battery Heat Generation Estimation and Temperature Prediction with Minimal Experimentation
3.1	Daisuke Inoue Gillian Smith Jagdeep Dhesi	Nonlocal Mean Field Schrödinger Bridge with Learned Interactions Spatiotemporal interpolation of elevation data over glaciers with partial convolutional neural networks Structure Preserving Neural Networks for Nambu-Poisson Dynamics
3.5	Jiani Wei Kasumi Ohno Kaylee Vo	Improving the stability of the covariance-controlled adaptive Langevin thermostat for large-scale Bayesian sampling Physics-Informed Meta-Learning for Fast Adaptation of Parametric PDEs Variational Boosting for Physics-Informed Neural Networks
16.50 – 17.50 2.6	Tom Pock	Keynote 2 - Sampling versus optimization
18.00 – 19.00	All	Reception and posters in the Level 2 foyer

Tuesday 15 September		
Time & Venue	Speaker	Title
08.30 – 09.00	All	Coffee in the Level 2 foyer
09.00 – 09.40		Invited talks (2 parallel, 40 mins per talk)
3.1	Priscilla Canizares	Scientific Machine Learning for the Next Generation of Gravitational-Wave Detectors
3.5	Katarzyna Michalowska	Neural operator learning for physical systems
09.45 – 10.25		Invited talks (2 parallel, 40 mins per talk)
3.1	Leon Bungert	Quantifying concentration phenomena of self-attention transformers
3.5	Yeonjong Shin	Beyond Black-Box Modeling: Thermodynamics-Informed Machine Learning for Complex Dynamical Systems
10.30 – 11.00	All	Coffee in the Level 2 foyer
11.00 – 11.40		Contributor talks (3 parallel, 20 mins per talk)
2.6	Kjeld Jensen Lei Sun	Using sequential monte carlo and evidential neural networks for inverse modelling on physical device simulation models Importance-Weighted Operator Learning Under Probability Measure Shifts
3.1	Liam Burrows Libo Chen	Statistical shape modelling to detect pulmonary hypertension A Temporally Conditioned Diffusion Framework for Probabilistic Spatiotemporal Precipitation Downscaling
3.5	Paola Causin Adrian Weihs	Geometry is a Player in the Dynamics of Diffusion-Driven Generative Processes Mathematical Foundations of Multiple Operator Learning
11.45 – 12.45 2.6	Qianxiao Li	Keynote 3 - Constructing macroscopic dynamics using deep learning
12.45 – 14.15	All	Lunch in the Level 2 foyer
14.15 – 15.15 2.6	Dimitris Giannakis	Keynote 4 - Operator methods and quantum information science for statistical modeling of dynamical systems
15.15 – 15.45	All	Coffee in the Level 2 foyer
15.45		Contributor talks (3 parallel, 20 mins per talk)
2.6	Pratham Lalwani Shany Neeman Vignesh Gopakumar	Compositional Physics-Informed Neural Flow Learning PDE solutions through Chebyshev encoding Learning Physical Operators using Neural Operators
3.1	Yusuke Tanaka Mohammad Fadil Sumun AB Keshav Kumar	Discrete-Gradient Gaussian Processes for Learning Energy-Based Dynamical Systems Error Analysis of Physics-Informed Neural Networks for High-Dimensional Exotic Option Pricing Ground-Truth-Free Adaptive Sampling for Machine Learning-based Reduced-Order Modeling

3.5	Aarju Srivastava Patrick Fahy Aleix Segui Ugalde	Study of two-dimensional time-fractional nonlinear reaction advection–diffusion equation using nnm method Greedy Learning to Optimize with Convergence Guarantees Physical Alignment: A Geometry of Scientific Reliability Under Latent Uncertainty
16.50 – 17.50 2.6	Gabrielle Steidl	Keynote 5 - Spherical Flows for Sampling from Discrete State Spaces

Wednesday 16 September		
Time & Venue	Speaker	Title
08.30 – 09.00	All	Coffee in the Level 2 foyer
09.00 – 09.40		Invited talks (2 parallel, 40 mins per talk)
3.1	Sofya Maslovskaya	Application of structure preserving numerical methods in deep learning
3.5	Jemima Tabeart	Data assimilation and machine learning: challenges and opportunities
09.45 – 10.25		Invited talks (2 parallel)
3.1	Matthew Thorpe	Optimal Transport Sliced Sandwiches
3.5	Matt Colbrook	Data-driven Resonances and Tipping Points for Dynamical Systems
10.30 – 11.00	All	Coffee in the Level 2 foyer
11.00 – 11.40		Contributor talks (3 parallel, 20 mins per talk)
2.6	Alex Richardson Amin Sabir	Inferring Rules of Developmental Patterning with Neural Cellular Automata Learned regularisation methods for light-sheet fluorescence microscopy
3.1	Atsushi Takabatake Baige Xu	Continuized HiPPO Operators for state space models Learning Families of Dissipative Natural Systems via Conformal Symplectic Neural Flows
3.5	Bohan Zhan Christoph Brune	Langevin Sampling Methods with Adaptive Friction and Stepsize RONOM: Reduced-Order Neural Operator Modeling
11.45 – 12.45 2.6	Hyung Ju Hwang	Keynote 6 - How to recover information from imperfect data
12.45 – 14.15	All	Lunch in the Level 2 foyer
14.15 – 15.15 2.6	Juan Pablo Ortega	Keynote 7 - Kernel Methods for Structure-Preserving Learning
15.15 – 15.45	All	Coffee in the Level 2 foyer
15.45 – 16.45 2.6	Olga Mula	Keynote 8 - Funny things happening in Neural Galerkin Schemes
19.30	Booked only	Conference dinner in the Claverton Rooms

Thursday 17 September		
Time & Venue	Speaker	Title
08.30 – 09.00	All	Coffee in the Level 2 foyer
09.00 – 09.40		Invited talks (2 parallel, 40 mins per talk)
3.1	Jeremias Sulam	Sampling Beyond Scores: Proximal Diffusion Models
3.5	Noburu Isobe	A control theoretical view of mean-field Transformers
09.45 – 10.30 2.6	Chris Budd	Tutorial 2 – Presenting AI to policy makers
10.30 – 11.00	All	Coffee in the Level 2 foyer
11.00 – 11.40		Contributor talks (3 parallel, 20 mins per talk)
2.6	Daisuke Furihata, Daniel Dehtyriov	Differentiable Voronoi Particle Methods: Automatic Differentiation for Structure-Preserving PDE Simulation Deep Learning Algebraic Reynolds Stress Closures for RANS Simulations of Turbulent Flows
3.1	Shengyan Li Eszter Székely	Learning Singularity-Encoded Green's Functions with Application to Iterative Methods Surrogate models for materials in fusion power plants
3.5	Ingvild Adde Kanav Rana	Latent PDE mapping for physics-informed learning across geometries with limited data Parametric Koopman Autoencoder for Linearization of Parabolic PDEs
11.45 – 12.45 2.6	Elena Celladoni	Keynote 9 - Structure preservation and Deep Learning for Learning Mechanical Systems from Data
12.45 – 14.15	All	Lunch in the Level 2 foyer
14.15 – 15.15		Contributor talks (3 parallel, 20 mins per talk)
2.6	Konstantin Riedl Leonardo Del Grande Marcello Carioni	Global Convergence of Adjoint-Optimized Neural PDEs Multi-Headed Transformer Architectures as Time-dependent Wasserstein Gradient Flows An invertible generative model for forward and inverse problems
3.1	Mateo Cervantes Matthias Ehrhardt Miao Li	Machine Learning and Computer Vision Approaches for Nanomechanical Characterisation of Organic Semiconductors via Atomic Force Microscopy A Primal-Dual Algorithm for Image Reconstruction with Input-Convex Neural Network Regularizers Hyperparameter Tuning for Stochastic Gradient MCMC via Importance-Based Preferential Subsampling
3.5	Niels Jensen Peiyuan Zhao Sebastian Gotschel	Differentiable Simulations for Joint Parameterized Optimization of Antenna Arrays Structure-preserving integrators for learned GENERIC systems Combining numerical methods and machine learning for science and engineering
15.15 – 15.45	All	Coffee in the Level 2 foyer

15.45 - 16.45		Contributor talks (3 parallel, 20 mins per talk)
2.6	Davide Murari Shota Deguchi Takeshi Koshizuka	Discovering piecewise-smooth dynamics from trajectory data Normalized distance fields and unbiased adaptive weights for reliable inverse analysis of incompressible flow using PINNs Understanding Generalization in Physics-Informed Models through Affine Variety Dimensions
3.1	Wenhui Ni Yeang Makara Zhanxing Zhu	Multiscale Coupling for Probabilistic Diffeomorphic Shape Models Symplectic Neural Operators for Learning Infinite Dimensional Hamiltonian Systems Neural Explicit Modelling for Deformable Solids and Fluid-Solid Interaction
3.5	Anjuman Yahya Saleh	Study of two dimensional nonlinear reaction-diffusion equation using a Legendre polynomial and Fourier feature layers based Physics-Informed Neural Network Learning Bases via normalizing flows: Application to solving Schrödinger equations and image compression
16.45		Conference closes