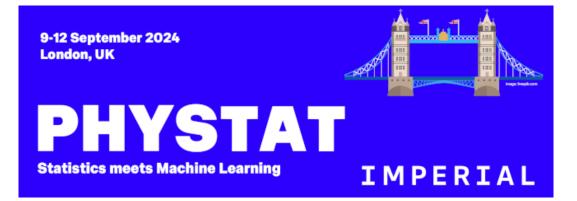
Session Program

9-12 Sept 2024



PHYSTAT - Statistics meets ML

Talks

Imperial College London, Lecture Theatre 2, Blackett Laboratory

Tuesday 10 September

09:00	Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Wouter Verkerke
	09:00-09:15 Welcome
	09:15-10:00 ML in Particle Physics Speaker Gregor Kasieczka
10:30	10:00-10:30 Lorentz-Equivariant Geometric Algebra Transformers for High-Energy Physics Speaker Jonas Spinner
11:00	Talks Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Alan Heavens
	11:00-11:45 Cosmology and machine learning Speaker Ben Wandelt
12:30	11:45-12:30Simulation-based machine learning for gravitational-wave analysisSpeaker Maximilian Dax
14:00	Talks Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Sergei Gleyzer
	14:00-14:45 Interpretable Machine Learning for Particle Physics Speaker Jesse Thaler
	14:45-15:30 Understanding and mitigating failures in anomaly detection: a probabilistic perspective Speaker
15:30	Lily Zhang
16:00	Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Robert Cousins Jr
	16:00-16:45 Statistical tests for anomaly detection at the LHC Speaker Gaia Grosso

16:45-17:10

Detecting New Physics as data anomalies at the LHC: Transitioning from smallscale toy datasets to millions of complex proton collisions

Speaker

Thea Aarrestad

17:10-17:35

Anomaly aware machine learning for dark matter direct detection at the DARWIN experiment

Speaker

Andre Joshua Scaffidi

17:35-18:00 Feldman-Cousins' ML Cousin

Speaker

Joshua Villarreal

18:00

Wednesday 11 September

09:00-09:45	Theoretical and Societal Topics in AI and Deep Learning for Physi
Speaker Pierre Baldi	
09:45-10:10	AI Benchmarks and Science
Speaker Jeyan Thiyagal	ingam
10:10-10:35 Improved V Hierarchica	Veak Lensing Photometric Redshift Calibration via StratLearn and I Modeling
Speaker Maximilian Aut	enrieth
Talks	ation: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Olaf Be
11:00-11:45	Simulation-based Inference (SBI)
Speaker Aishik Ghosh	
11:45-12:30	Extending Unfolding Methods With Machine Learning
Speaker Vinicius Mikuni	
Talks Session Loca Ryan James Nich	ation: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: nol
14:00-14:25	Generative Unfolding
Speaker Tilman Plehn	
14:25-14:50	Isbi: linear simulation based inference
Speaker Dr William Han	dley
14:50-15:15	
-	nal detection with classifiers decorrelated via optimal transport
Speaker	

16:00	Speaker Ramon Winterhalder
16:30	Talks Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Glen Cowan
	16:30-16:55 Fairness Methods in Particle Physics Event Classification
	Speaker Oliver Rieger
	16:55-17:40 Systematics: Misery or Muse?
	Speaker Kyle Stuart Cranmer
	17:40-18:05
	Development of systematic-aware neural network trainings for binned-likelihood- analyses at the LHC
18.05	Speaker Artur Monsch

18:05

Thursday 12 September

09:00	Talks Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: David A. van Dyk
	09:00-09:45 Model misspecification meets ML: a HEP perspective
	Speaker Alexander Held
10:15	09:45-10:15 Learned harmonic mean estimation of the Bayesian evidence with normalizing flows Speaker Alicja Polanska
10:45	
10.45	Talks Session Location: Imperial College London, Lecture Theatre 2, Blackett Laboratory Convener: Jason McEwen
	10:45-11:15
	Interpretability in Semi-Supervised Classifier Tests for Model-Independent Searches of New Physics
	Speaker Mikael Kuusela
	11:15-11:45
	pop-cosmos: investigating the explainability of a high-dimensional, data-driven
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