

AI and Quantum Information Applications in Fundamental Physics

Monday, 13 February 2023

Talk & discussion: Session 1 (chair: Claudius Krause) (14:00 - 15:15)

time	[id] title	presenter
14:00	[1] No classification without representation -- Efficient data representations & other challenges for anomaly detection, generative models, and supervised classification	KASIECZKA, Gregor

Talk & discussion: Session 2 (chair: Claudius Krause) (15:45 - 18:00)

time	[id] title	presenter
15:45	[2] Kinematic Variables and Feature Engineering for Particle Phenomenology	KONG, KC
17:00	[3] DeeLeMa: Missing information search with Deep Learning for Mass estimation	BAN, Kayoung
17:30	[4] A review of machine learning applications of jet tagging	WANG, Daohan

Tuesday, 14 February 2023

Talk & discussion: Session 3 (chair: Gregor Kasieczka) (09:30 - 10:45)

time	[id] title	presenter
09:30	[6] Normalizing flow for data-driven background estimations and other uses	CHOI, Suyong

Talk & discussion: Session 4 (chair: Gregor Kasieczka) (11:00 - 12:15)

time	[id] title	presenter
11:00	[7] Fast and Faithful Calorimeter Simulations with Normalizing Flows	KRAUSE, Claudius

Wednesday, 15 February 2023

Talk & discussion: Session 5 (chair: Suyong Choi) (09:30 - 10:45)

time	[id] title	presenter
09:30	[5] Uncertainties in the era of ML	GHOSH, Aishik

Talk & discussion: Session 6 (chair: Suyong Choi) (11:00 - 12:15)

time	[id] title	presenter
11:00	[8] Novel applications of normalizing flows from LHC to Astrophysics	SHIH, David

Talk & discussion: Session 7 (chair: Aishik Ghosh) (14:00 - 15:15)

time	[id] title	presenter
14:00	[9] Constructing novel nonparametric estimators for information-theoretic measure estimation.	NOH, Yung-Kyun

Talk & discussion: Session 8 (chair: Aishik Ghosh) (15:45 - 17:30)

time	[id] title	presenter
15:45	[10] Self-supervision in particle physics [remote talk]	DILLON, Barry
17:00	[12] Complicated parameter spaces and machine learnnig	RAMOS, Raymundo

Thursday, 16 February 2023

Talk & discussion: Session 9 (chair: Marat Freytsis) (09:30 - 10:45)

time	[id] title	presenter
09:30	[13] Quantum Machine Learning Applications for Data Analysis in High Energy Physics [remote talk]	DELGADO, Andrea

Talk & discussion: Session 10 (chair: Marat Freytsis) (11:00 - 12:15)

time	[id] title	presenter
11:00	[14] Theory-driven quantum machine learning for HEP	ARAZ, Jack

Friday, 17 February 2023

Talk & discussion: Session 11 (chair: Jack Araz) (09:30 - 10:45)

time	[id] title	presenter
09:30	[15] Quantum Machine Learning: Opportunities and Challenges (Part I)	PARK, Daniel

Talk & discussion: Session 12 (chair: Jack Araz) (11:00 - 12:15)

time	[id] title	presenter
11:00	[16] Quantum Machine Learning: Opportunities and Challenges (Part II)	PARK, Daniel

Talk & discussion: Session 13 (chair: Seong Chan Park) (14:00 - 15:15)

time	[id] title	presenter
14:00	[17] Effective uses of quantum simulation for particle physics	FREYTSIS, Marat

Talk & discussion: Session 14 (chair: Seong Chan Park) (15:45 - 18:00)

time	[id] title	presenter
15:45	[18] Quantum metric learning for image analysis	HAMMAD, Ahmed
16:15	[19] Variational quantum algorithms	BAE, Eunok
16:45	[20] Bubble nucleation as a QUBO problem	PARK, Jae-hyeon
17:15	[21] Combinatorial optimization with Quantum machine	PARK, Myeonghun