

# **Workshop for Korea-UK AI/ML Research in Fundamental Sciences**

**Monday, 31 October 2022 - Friday, 4 November 2022**

**Sejong University, South Korea**  
**Programme**

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# Monday, 31 October 2022

## Session 1: Session 1 (10:00 - 11:20)

### **AI Center, 12th floor**

time	title	presenter
10:00	Registration	
10:20	Introduction	KIM, Seyong (PI, Sejong University)
10:30	Welcome message	BAIK, Sungwook (Vice President, Sejong U.)
10:45	Welcome message	DAVIES, Gareth (Head of Science & Innovation Network, UK embassy/Korea)
11:00	AIMLAC CDT activity	AARTS, Gert (Co-Pi, Swansea University)

### **Lunch (11:30 - 13:30)**

## Session 2: Session 2 (13:30 - 16:15)

### **AI Center, 12th floor**

time	title	presenter
13:30	Modelling materials to improve safety of nuclear fuels and design the next generation of nuclear systems	MIDDLEBURGH, Simon (Bangor University)
14:15	Solutions of HPC-AI for Hybrid Environment	LEE, Sangmoon (ATOS KOREA)
14:45	Hypergames and Cybersecurity	CROOK, Tonicha (Swansea University)
15:15	Grammatical Neuroevolution	WINTER, Ben (Bangor University)
15:45	Research in industry	SPRIGGS, Tom (Swansea University)

# Tuesday, 1 November 2022

## Session 3: Session 3 (10:30 - 12:00)

### ***AI Center, 12th floor***

time	title	presenter
10:30	Deep learning based medical image standardization	KIM, Mingyu (Promedius Inc.)
11:00	Exploring the growth progression of breast cancer using deep features	THOMAS, Cory (Aberystwyth university)
11:30	Novel Classes and Epistemic Uncertainty in Medical Imaging	ROBINSON, Will (AIMLAC / Aberystwyth University)

### **Lunch (12:00 - 14:00)**

## Session 4: Session 4 (14:00 - 16:20)

### ***AI Center, 12th floor***

time	title	presenter
14:00	Regularized Knowledge Gradient: A No-regret Algorithm for Stochastic Gaussian Multi-armed Bandit Problems	LEE, Donghun (Korea U.)
14:45	Automated optimisation of industrial X-ray computed tomography	MITCHELL, Iwan (AIMLAC)
15:15	Two approaches using Deep Learning to solve partial differential equations	LEE, Jaeyong (KIAS)

## Wednesday, 2 November 2022

### Session 5: Session 5 (15:15 - 17:00)

**AI Center, 12th floor**

time	title	presenter
15:15	Machine Learning for Invisible Particle Search	KO, Young Ju (IBS)
16:00	Dark Matter Searches: The latest result from the Large Hadron Collider and outlook	GLOWACKI, Maciej (University of Bristol (AIMLAC))
16:30	The Automatic Particle Reconstruction with Machine Learning at e+e- Collider	KIM, Kyungho (KISTI)

### Banquet: Banquet (18:00 - 21:00)

**Location: National Museum of Korea, Yong-San, Seoul**

# Thursday, 3 November 2022

## **Session 6: Session 6 (10:30 - 12:15)**

### **Gwang-Gae-To-Gwan, B1**

time	title	presenter
10:30	Treasures of the deep: GW-observation of black hole-spin down at 5.5 sigma	VAN PUTTEN, Maurice (Sejong University)
11:15	Deep Image Segmentation of the Radio Sky	STEWART, Hattie (University of Bristol)
11:45	Constraining Cosmology using Self-Attention	HWANG, Se Yeon (U. of Seoul)

### **Lunch (12:15 - 14:00)**

## **Session 7: Session 7 (14:00 - 16:15)**

### **Gwang-Gae-To-Gwan, B1**

time	title	presenter
14:00	Demystifying Gravitational Waves: A Sweet of App utilities	ABCHOUYEH, Maryam Aghaei (Sejong U./UNIST)
14:30	Precision physics with Antihydrogen - and how Machine Learning help	MADSEN, Niels (Swansea University)
15:15	A data-driven method for classifying gamma-rays and cosmic rays with the HAWC observatory	CHO, Baek Sun (U. of Seoul)
15:45	ITS2 alignment : AI approach	KIM, Jaehyun (Yonsei University)

# Friday, 4 November 2022

## Session 8: Session 8 (10:30 - 12:00)

### **Gwang-Gae-To-Gwan, B1**

time	title	presenter
10:30	Machine learning for lattice field theory and back	AARTS, Gert (Swansea University and ECT*)
11:15	Quantum Computing in Noisy Environment and Statistical Mechanics Model	KIM, Seyong (Sejong University)

### **Lunch (12:00 - 13:30)**