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

# **Report of Contributions**

Registration

Contribution ID: 2

Type: not specified

# Registration

Monday 31 October 2022 10:00 (20 minutes)

Welcome message

Contribution ID: 3

Type: not specified

# Welcome message

Monday 31 October 2022 10:30 (15 minutes)

Presenter: BAIK, Sungwook (Vice President, Sejong U.)

AIMLAC CDT activity

Contribution ID: 4

Type: not specified

# AIMLAC CDT activity

Monday 31 October 2022 11:00 (20 minutes)

Presenter: AARTS, Gert (Co-Pi, Swansea University)

Hypergames and Cybersecurity

Contribution ID: 6

Type: not specified

# Hypergames and Cybersecurity

Monday 31 October 2022 14:45 (30 minutes)

Author: CROOK, Tonicha (Swansea University)Presenter: CROOK, Tonicha (Swansea University)Session Classification: Session 2

Solutions of HPC-AI for Hybrid E  $\,\cdots\,$ 

Contribution ID: 7

Type: not specified

## **Solutions of HPC-AI for Hybrid Environment**

*Monday 31 October 2022 14:15 (30 minutes)* 

Presenter: LEE, Sangmoon (ATOS KOREA)

Grammatical Neuroevolution

Contribution ID: 8

Type: not specified

## **Grammatical Neuroevolution**

Monday 31 October 2022 15:15 (30 minutes)

Author: WINTER, Ben (Bangor University)Presenter: WINTER, Ben (Bangor University)Session Classification: Session 2

Research in industry

Contribution ID: 9

Type: not specified

# **Research in industry**

Monday 31 October 2022 15:45 (30 minutes)

**Presenter:** SPRIGGS, Tom (Swansea University)

Exploring the growth progression ···

Contribution ID: 10

Type: not specified

# Exploring the growth progression of breast cancer using deep features

Tuesday 1 November 2022 11:00 (30 minutes)

Author: THOMAS, Cory (Aberystwyth university)Presenter: THOMAS, Cory (Aberystwyth university)Session Classification: Session 3

Deep learning based medical ima

Contribution ID: 11

Type: not specified

## Deep learning based medical image standardization

Tuesday 1 November 2022 10:30 (30 minutes)

**Presenter:** KIM, Mingyu (Promedius Inc.) **Session Classification:** Session 3

Novel Classes and Epistemic Unc ...

Contribution ID: 12

Type: not specified

#### Novel Classes and Epistemic Uncertainty in Medical Imaging

Tuesday 1 November 2022 11:30 (30 minutes)

Presenter: ROBINSON, Will (AIMLAC / Aberystwyth University)

Automated optimisation of indus ...

Contribution ID: 13

Type: not specified

# Automated optimisation of industrial X-ray computed tomography

Tuesday 1 November 2022 14:45 (30 minutes)

Author:MITCHELL, Iwan (AIMLAC)Presenter:MITCHELL, Iwan (AIMLAC)Session Classification:Session 4

Regularized Knowledge Gradient: ···

Contribution ID: 14

Type: not specified

#### Regularized Knowledge Gradient: A No-regret Algorithm for Stochastic Gaussian Multi-armed Bandit Problems

Tuesday 1 November 2022 14:00 (45 minutes)

Presenter:LEE, Donghun (Korea U.)Session Classification:Session 4

Two approaches using Deep Lear  $\cdots$ 

Contribution ID: 16

Type: not specified

# Two approaches using Deep Learning to solve partial differential equations

Tuesday 1 November 2022 15:15 (30 minutes)

**Presenter:** LEE, Jaeyong (KIAS) **Session Classification:** Session 4

Dark Matter Searches: The latest …

Contribution ID: 17

Type: not specified

#### Dark Matter Searches: The latest result from the Large Hadron Collider and outlook

Wednesday 2 November 2022 16:00 (30 minutes)

**Presenter:** GLOWACKI, Maciej (University of Bristol (AIMLAC))

Machine Learning for Invisible P  $\, \cdots \,$ 

Contribution ID: 18

Type: not specified

# Machine Learning for Invisible Particle Search

Wednesday 2 November 2022 15:15 (45 minutes)

**Presenter:** KO, Young Ju (IBS) **Session Classification:** Session 5

The Automatic Particle Reconstr ...

Contribution ID: 19

Type: not specified

#### The Automatic Particle Reconstruction with Machine Learning at e+e- Collider

Wednesday 2 November 2022 16:30 (30 minutes)

**Presenter:** KIM, Kyungho (KISTI) **Session Classification:** Session 5

Deep Image Segmentation of the ···

Contribution ID: 20

Type: not specified

# **Deep Image Segmentation of the Radio Sky**

Thursday 3 November 2022 11:15 (30 minutes)

**Presenter:** STEWART, Hattie (University of Bristol) **Session Classification:** Session 6

Constraining Cosmology using …

Contribution ID: 21

Type: not specified

# **Constraining Cosmology using Self-Attention**

Thursday 3 November 2022 11:45 (30 minutes)

**Presenter:** HWANG, Se Yeon (U. of Seoul)

Treasures of the deep: GW-  $\cdots$ 

Contribution ID: 22

Type: not specified

#### Treasures of the deep: GW-observation of black hole-spin down at 5.5 sigma

Thursday 3 November 2022 10:30 (45 minutes)

**Presenter:** VAN PUTTEN, Maurice (Sejong University) **Session Classification:** Session 6

Precision physics with Antihydro ...

Contribution ID: 23

Type: not specified

#### Precision physics with Antihydrogen - and how Machine Learning help

Thursday 3 November 2022 14:30 (45 minutes)

**Presenter:** MADSEN, Niels (Swansea University)

A data-driven method for classify  $\cdots$ 

Contribution ID: 24

Type: not specified

#### A data-driven method for classifying gamma-rays and cosmic rays with the HAWC observatory

Thursday 3 November 2022 15:15 (30 minutes)

**Presenter:** CHO, Baek Sun (U. of Seoul) **Session Classification:** Session 7

Demystifying Gravitational Wav

Contribution ID: 25

Type: not specified

#### Demystifying Gravitational Wavws: A Sweet of App utilities

Thursday 3 November 2022 14:00 (30 minutes)

Presenter: ABCHOUYEH, Maryam Aghaei (Sejong U./UNIST)

ITS2 alignment : AI approach

Contribution ID: 26

Type: not specified

# ITS2 alignment : AI approach

Thursday 3 November 2022 15:50 (30 minutes)

**Presenter:** KIM, Jaehyun (Yonsei University)

Machine learning for lattice field  $\cdots$ 

Contribution ID: 27

Type: not specified

# Machine learning for lattice field theory and back

Friday 4 November 2022 10:00 (45 minutes)

**Presenter:** AARTS, Gert (Swansea University and ECT\*) **Session Classification:** Session 8

Quantum Computing in Noisy E ····

Contribution ID: 28

Type: not specified

#### Quantum Computing in Noisy Environment and Statistical Mechanics Model

Friday 4 November 2022 10:45 (45 minutes)

**Presenter:** KIM, Seyong (Sejong University)

Welcome message

Contribution ID: 31

Type: not specified

# Welcome message

Monday 31 October 2022 10:45 (15 minutes)

 Presenter:
 DAVIES, Gareth (Head of Science & Innovation Network, UK embassy/Korea)

 Session Classification:
 Session 1

Modelling materials to improve s  $\cdots$ 

Contribution ID: 32

Type: not specified

# Modelling materials to improve safety of nuclear fuels and design the next generation of nuclear systems

Monday 31 October 2022 13:30 (45 minutes)

Presenter: MIDDLEBURGH, Simon (Bangor University)

Introduction

Contribution ID: 37

Type: not specified

# Introduction

Monday 31 October 2022 10:20 (10 minutes)

Presenter: KIM, Seyong (PI, Sejong University)

Overview of ML Activites in the …

Contribution ID: 38

Type: not specified

### **Overview of ML Activites in the Computing Physics** Lab (CPLUOS) at the University of Seoul

Friday 4 November 2022 11:30 (45 minutes)

**Presenter:** WATSON, Ian James (U. of Seoul) **Session Classification:** Session 8

Deep Learning for Low-Latency ···

Contribution ID: 39

Type: not specified

#### **Deep Learning for Low-Latency Detection of Unmodelled Gravitational-Wave Transients**

Thursday 3 November 2022 16:20 (30 minutes)

Presenter:NORMAN, Michael (Cardiff University)Session Classification:Session 7