AIDEN DURRANT

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EDUCATION

PhD Computing Science, *University of Aberdeen*, UK — *May 2020 - Present*
School of Natural and Computing Sciences
Advised by Dr. Georgios Leontidis and Prof. Stefanos Kollias

MPhil Computer Science, *University of Lincoln*, UK — *September 2018 - April 2020*
Machine Learning Group, School of Computer Science
Advised by Dr. Georgios Leontidis and Prof. Stefanos Kollias

BSc (Hons) Computer Science., *University of Lincoln*, UK — *September 2015 - May 2018*
School of Computer Science
Grade: 1st Class Honours (Rank: 1/154)

AWARDS

Best PhD Poster Award - FISA 2019 — *June 2019*
Euratom Research and Training in Safety of Nuclear Reactors

Best Graduate Award — *September 2018*
Highest overall grade in the class of 2018 (1/154)

PROJECTS

Nuclear Reactor Anomaly Detection and Localisation
Core Monitoring Techniques & Experimental Validation and Demonstration - CORTEX
Developing innovative core monitoring techniques for anomaly detection in nuclear reactors using the inherent fluctuations in the neutron flux. Responsible for devising Machine learning methodologies to invert the reactor transfer function and recover the anomaly responsible for an observed fluctuation.

Binary Classification of Parkinson's Disease from MRI Brain Scans
Undergraduate Final Year Project
Exploration and development of Deep Learning approaches for the binary classification of Parkinson's disease patients to healthy patients given MRI frames of brain scans. Utilised convolutional neural networks, and transfer learning to develop an understanding of Machine Learning and Deep Learning.

WORK EXPERIENCE

University of Lincoln, UK — January 2019 - Present
Research Assistant Deep Learning - CORTEX Horizon 2020 EU Project.

· The development of bespoke systems for the signal analysis of nuclear reactor instrumentation readings to invert reactor transfer function to classify and localise perturbations from simulated and real readings.

University of Lincoln, UK — September 2017 - May 2019
Associate Demonstrator (Teaching Assistant)

· Assist with the teaching of lab work and lab assignments, delivering workshop tutorials and tasks. Modules include; Data Mining, Machine Learning, Software Engineering, Mobile Autonomous Robotics, Programming & Data Structures, Cloud Computing.

TECHNICAL SKILLS

Programming Languages	Python, C++, C#, MATLAB
DL Frameworks	Pytorch, Tensorflow, Keras
Software & Tools	LaTeX, Docker, Linux, Git

PUBLICATIONS

Demaziere, C. Mylonakis, A. Vinai, P. Durrant, A. De Sousa Ribeiro, F. Wingate, J. Leontidis, G. & Kollias, S. (2020), Neutron Noise-Based Anomaly Classification and Localization Using Machine Learning, *in* 'PHYSOR: International Conference on Physics of Reactors'.

Durrant, A. Leontidis, G. & Kollias, S. (2019), '3D Convolutional and Recurrent Neural Networks for Reactor Perturbation Unfolding and Anomaly Detection', *EPJ Nuclear Sci. Technol.* **5**, 20.