Artificial Intelligence machine learning and advanced computing **PhD (AIMLAC)**

**Overview**

Two fully-funded 4-year PhD scholarships are available to start in October 2020 in the area of Artificial Intelligence machine learning and advanced computing. The PhDs are suitable for graduates with a keen interest in AI algorithms for data analytics, visualisation and image analysis.

The 4-year PhD scholarships, will sit within the UKRI Centre for Doctoral Training in Artificial Intelligence, Machine Learning & Advanced Computing (CDT-AIMLAC, [http://cdt-aimlac.org/)](http://cdt-aimlac.org/%29). The two students will be based at Bangor University, located within the School of Computer Science and Electronic Engineering (CSEE). Funding will cover the full cost of UK/EU tuition fees and an annual stipend of £14,750. Additional funding is available for research expenses.

Candidates must identify their preference of primary supervisor and project from:

* **P1-BU-2020, Automated optimisation of industrial X-ray Computed Tomography**

*Dr Franck Vidal (CSEE) and Dr Simon Middleburgh (CSEE)* . This PhD will investigate how to automate the parametrisation of non-destructive testing (NDT) with Computerised Tomography (CT) for customised components. High Performance computing will be used to scan and tune multidimensional parameters, which is challenging using today’s algorithms.

* **P2-BU-2020, Learning from Badly Behaving Data.** *Prof Lucy Kuncheva (CSEE), Dr Franck Vidal (CSEE).* Focusing on deep learning systems, this PhD will investigate the modern data challenge of data “behaving badly”. In addition to coming in massive volumes, data can be streaming, drifting, partially labelled, multi-labelled, contaminated, imbalanced, wide, and so on.
* **P3-BU-2020, Developing Artificial Intelligence Techniques to Improve Hydrological Model Regionalisation.** *Dr Sopan Patil (School of Natural Sciences), Dr Panagiotis Ritsos (CSEE).* The focus of this PhD is to develop AI techniques that can help improve hydrological model regionalisation. Specifically, the research will investigate novel use of AI and information visualization to interactively relate hydrological model parameters to the physical properties of river basins.
* **P4-BU-2020, Automated data cleaning, analysis and visualization from smartphone captured data for climate change.** Dr Simon Willcock (School of Natural Sciences), Dr William Teahan (CSEE), Prof Jonathan Roberts (CSEE). This research will investigate AI techniques to automate data cleaning, analysis and visualization of results from smarphone captured data science in the area of polulation growth, sustainability and climate change. It builds on collaborations with Natural Sciences and Computing, and require bespoke AI, Natural Language Processing (NLP) and visualisation solutions to be developed.
* **P5-BU-2020, Programme & Curriculum Analytics.** Dr Cameron Gray (CSEE), Dr Dave Perkins (CSEE). This research will investigate appropriate methods of Machine Learning algorithms, tools and processes and apply them to examine how educational design influences both achievement and experience in modules and programmes.

The successful candidates will be required to attend taught components in year 1 (such as foundations of AI, research methods, information visualisation), residential meetings at Aberystwyth, Bristol, Cardiff or Swansea Universities, deliver responsible innovation, and engage with placements with external partners throughout the four-year programme. Placements may be six-month, or shorter three-month or two week blocks. Successful applicants will be registered at Bangor University, hosted by the School of Computer Science and Electronic Engineering throughout their period of study, with the delivery of the related training in the PhD programme being shared between the Universities of Aberystwyth, Bangor, Bristol, Cardiff and Swansea.

**Entry Requirements**:

Applicants should have at least a 2:1 degree in computer science, mathematics or electronic engineering (with substantial programming), or closely related discipline. You must have excellent programming skills and interest in AI, machine learning and advanced computing and one of the topics, above. You should have an aptitude and ability in computational thinking and methods (as evidenced by your degree). Shortlisted candidates will be interviewed around the second half of February to the beginning of March.

We welcome applications by UK/Home and EU nationals. To qualify as a UK/Home applicant, prospective students must have been ordinarily resident in the UK for three years immediately prior to the start of the award, with no restrictions on how long they can remain in the UK. Residence in the UK that is solely for the purpose of education will only count towards these three years if the candidate is an EU national.

More information on this exciting research can be found at <http://cdt-aimlac.org/cdt-research.html>.

**Apply**

Applications through Bangor’s electronic application process; your application must include the following attachments in pdf form:

1. CV
2. Degree certificates and transcripts (if you are still an undergraduate, provide a transcript of results known to date)
3. A statement no longer than 1000 words that explains why you want to join our Centre, and your preferred topic/supervisor.
4. Academic references - all scholarship applications require two supporting references to be submitted. Please ensure that your chosen referees are aware of the funding deadline (to be determined), as their references form a vital part of the evaluation process. Please include these with your scholarship application.

In addition, email the pdf(s) of your application to cdt-aimlac@swansea.ac.uk.

**The deadline for applications is 31 January 2020; however applications will be accepted until all positions are filled.**

**Further information**

For more information please contact Professor Jonathan Roberts j.roberts@bangor.ac.uk