



Vacancy for

PhD Studentship in Argumentation & Data Science

Tax free stipend of £18,622 (plus payment of fees)
48 months fixed term

Closing Date; 30th August 2023



www.dundee.ac.uk/scienceengineering/

www.arg.tech

Further Particulars

1 Background

Centre for Argument Technology

ARG-tech is one of the world's leading research groups in the computational application of theories of argument. As an interdisciplinary team, we focus on developing foundational theory in philosophy, linguistics and cognitive science that facilitates the development of practical AI applications. The goal is to help improve, teach, track and navigate the discussions and debates that run our governments, structure scientific research, underpin the corporate boardroom, drive legal process and frame religious beliefs.

Our research has attracted funding of over £8m, and we have over 200 refereed papers in print. Our freely available software tools such as OVA (for performing argument analysis) have tens of thousands of users, we have pioneered robust new standards such as the AIF and we have the largest freely accessible corpus of analysed argumentation anywhere in the world in AIFdb. The group also hosted the editorial office for the journal *Argument and Computation* from its inception in 2010 until 2016.

Our collaborations and consultancy with commercial and government organisations including IBM, DSTL and the BBC have driven our focus on end-user impact, and our public communication in print and broadcast media has reached over 30 million people.

Computing

Computing research at the University of Dundee has a distinctive focus. Our research benefits society and helps to enhance the lives of many individuals. The 2021 Research Excellence Framework (REF) rated our entire Computer Science & Informatics REF submission as "world-leading" or "internationally excellent" (a distinction shared only with Birmingham, Bristol, Imperial, and Oxford).

Computing is home to four distinct research groups: Computer Vision & Image Processing (CVIP), The Centre for Argument Technology (ARG-tech), Human-Centred Computing (HCC), and Space Technology Centre (STC). These groups contribute to wider Research Clusters within the School of Science and Engineering.

Our teaching programme, which offers a range of undergraduate and postgraduate degrees, is research-led and utilises a range of innovative delivery methods with a strong commitment to the student experience. Our students have a unique opportunity to collaborate with a broad range of user groups who meet in the purpose-built Queen Mother Building to ensure that technological systems are developed to meet the needs and aspirations of a wide variety of people.

School of Science & Engineering

The School of Science and Engineering comprises the disciplines of: Biomedical, Civil, Electronic, and Mechanical Engineering; Computing; Mathematics; Physics; the Graduate Apprenticeship Programme and the Centre for Anatomy and Human Identification (CAHID). We host the Leverhulme Research Centre for Forensic Science, which has been designed to disrupt positively the forensic science ecosystem.

The School benefits from superb research infrastructure, substantial opportunities for interdisciplinary collaboration, and the University's established excellence in delivering undergraduate and postgraduate taught courses. Excellence in teaching and research consistently leads to impressive National Student Survey scores and Research Excellence Framework profile.

The School offers undergraduate, postgraduate, research degrees and international exchange opportunities. The School has approximately 1,500 students, with a spread across Research, Taught Postgraduate, and Undergraduate students. To mirror the diverse range of offerings for students, the School has approximately 300 members of staff (including academics, research, technicians and support staff). The School is frequented by members of the public, visiting academics, guest lecturers and external examiners.

University of Dundee

The University of Dundee aims to transform lives locally and globally through the creation, sharing and application of knowledge. We reflect this aim by excelling in teaching and research; contributing to social, economic and cultural development; and shaping the future by solving important, real-world problems.

We aim to become Scotland's leading University in all we choose to do, and to be recognised internationally for the quality of our graduates and the impact of our research. These research and teaching strengths have led to Dundee being ranked 4th in the UK (2nd in Scotland) for student satisfaction in 2019, 20th in the World (4th in the UK) in the 2019 Times Higher Education University Impact Rankings, 14th in the World for the highest proportion of highly cited publications in the 2019 CWTS Leiden Rankings, and 84th in the World for research quality in the Nature Index 2019.

The University is structured as ten academic schools and emphasises work that takes place across school and subject boundaries, bringing different expertise and viewpoints to approach issues in new, challenging and productive ways.

The University is a diverse community and is committed to equality of opportunity for all by providing a supportive, flexible and inclusive working environment. We have family-friendly policies (including flexible working and childcare vouchers), staff groups for LGBT+ and BME, and prayer room facilities. The University and the School of Science and Engineering hold Athena SWAN Bronze Awards, which recognise the promotion of gender equality, and have made further commitments to advancing an inclusive culture that supports and encourages all under-represented groups.

City of Dundee

Dundee is a post-industrial city that has worked hard to reinvent itself. With a population of 150,000, it is small enough to walk round but has all the cultural and leisure activities you would expect in a much larger city. Excellent shopping sits side-by-side with a vibrant cultural quarter, home to Scotland's award-winning Dundee Rep Theatre and the highly acclaimed Dundee Contemporary Arts, which has become a lively social hub and film house as well as a champion of leading-edge arts.

Dundee is the UK's only UNESCO City of Design and, with the opening of the new V&A Museum of Design – an iconic building designed by renowned architect Kengo Kuma, it has a growing reputation as a creative centre. Dundee was placed by the Wall Street Journal among their top ten places to visit in 2018, and 1st in Scotland in the Sunday Times 2019 Best Place to Live Guide.

Salaries in Dundee currently go further on the property ladder than almost any other city in the UK. The range of properties within commuting distance of the University covers the widest spectrum – from country houses and seaside cottages to handsome town villas and sleek city- quay apartments.

2 Role Information

Role Title: PhD studentship in Argumentation & Data Science

School: Science & Engineering

Discipline: Computing

Grade of post: PhD UKRI-equivalent stipend (<https://www.ukri.org/our-work/developing-people-and-skills/find-studentships-and-doctoral-training/get-a-studentship-to-fund-your-doctorate/>) plus payment of fees at home student rates (<https://www.dundee.ac.uk/guides/fee-status-assessment>)

Job category: Research Studentship

The Centre for Argument Technology is a highly interdisciplinary environment, and candidates should be willing to work across traditional disciplinary boundaries.

ARG-tech's software stack provides an environment for academic tools (such as one of the most popular analysis tools for argumentation, OVA (<http://ova.arg.tech>), and the only automated system for grading argument analysis, arggrader.com) as well as public-facing systems such as the Evidence Toolkit (<http://arg.tech/evtk>) which was deployed into thousands of secondary schools in partnership with the BBC. We provide open infrastructure for datasets of argument and debate (aifdb.org) based on the AIF standard for argument representation and knowledge engineering.

Most recently, we have also been working to develop tools supporting decision making across domains including healthcare, intelligence analysis, and law enforcement. Such tools must not only be capable of providing support and insight in high pressure environments, but also deal with challenges around data security and the sharing of sensitive information.

As a part of a research collaboration (see below for further details) funded by Health Data Research UK, we are looking to appoint a PhD student to work in the areas of argumentation and data science; specifically looking at how decisions can be made, shared and collaborated on, in situations where sensitive data may not be able to be fully shared.

HDR

An exciting new research collaboration between Health Data Research UK and the University of Dundee is funding a UK PhD studentship within Computing.

Health Data Research UK (HDR UK) is a national institute dedicated to improving health outcomes and advancing medical research through the use of data. Established in 2018, HDR UK is a partnership between leading universities, research institutions, and the National Health Service (NHS) in the UK. The primary mission of HDR UK is to harness the power of health data to drive scientific discoveries, develop innovative treatments and interventions, and ultimately improve patient care. By integrating and analysing vast amounts of health data, including electronic health records, genomic data, and other relevant information, HDR UK aims to generate insights that can transform healthcare delivery, policy, and research.

We need to better understand how to harness the power of data without the data leaving secure environments. This federated approach is to design and deploy predictive models within HDR-UK federated data infrastructures, especially focussing on technology potential, limitations, and ethical concerns.

3 Key responsibilities

- To develop both theoretical models and software tools which facilitate reasoning over sensitive data.
- To explore the application of automated software tools for extracting reasoning from large datasets and how these can be integrated with the reasoning of human experts.
- To contribute to the management and growth of our open argumentation infrastructure, including potential development of new tools for human-machine teaming and management of sensitive data.

Note: The duties of the post outlined above are not exhaustive and the role holder will be expected to be co-operative and flexible, undertaking such other duties as may reasonably be required.

4 Person specification

Essential knowledge, skills and experience

- First degree at 2:i or above in an appropriate subject. A masters degree is not necessarily required.
- Previous experience or study in argumentation and/or data science.

Desirable knowledge, skills and experience

- Interest in or experience with data management and data security.
- Interest in or experience with argument mining.
- Good analytical skills, with the ability to process and collate complex information and manage data in a structured manner and with a high level of accuracy.

5 Application Requirements

In addition to the online form, applicants must include with their application:

- Cover letter outlining the candidate's suitability for the role
- CV
- Names and contact details of at least three references

6 Contacts

To further discuss the details of this post, informal inquires may be made to Dr. John Lawrence (j.lawrence@dundee.ac.uk)