

1 Advertisement

Post Title: Research Fellow in Natural Language Processing

School/department: Engineering and Informatics

Hours: full time or part time hours considered up to a maximum of 1.0 FTE

Requests for flexible working options will be considered (subject to business need).

Contract: fixed term until 31 October 2023

Reference: 8587

Salary: starting at £34,304 to £40,927 per annum, pro rata if part time

Placed on: 10 June 2022

Closing date: 30 June 2022. Applications must be received by midnight of the closing date.

Expected Interview date: TBC

Expected start date: TBC

The Artificial Intelligence Research Group at the University of Sussex is looking for a Research Fellow to work on two projects: the Innovate UK funded project MeeTooSaives; and the Horizon 2020 funded project eCharge4Drivers.

MeeTooSaives is a collaboration with MeeToo Education Ltd and Bristol University Medical School. The MeeToo app delivers free, safe, anonymous, pre-moderated, peer support to 56k children and young people in the UK. The MeeTooSaives project aims to integrate Machine Learning and Natural Language Processing into the app in order to interrogate all data, rather than a specifically high-risk subset, to identify risk patterns, analyse semantic content and predict risk. Crucially, NLP will be used to extend support options, but integrating smart links to topic-matched resources. This is a research-intensive role with high publication potential in the rapidly developing field of humane and ethical Artificial Intelligence.

eCharge4Drivers is an EU-funded project that aims to improve the Electric-Vehicle charging experience. Our contribution to this large project concerns an analysis, using NLP methods, of online discussions relating to electric vehicle charging on various social media platforms.

Key responsibilities

On the MeeTooSaives project, the team at the University of Sussex is responsible for delivery of the Smart Links work package. In this work package, the objective is to apply advanced NLP/ML techniques to identify useful resources, based on the semantic content of users' posts/posting profile/similarity to other users. You will work with a full-time Data Scientist seconded from MeeToo to the University of Sussex in order to deliver these objectives. On the eCharge4Drivers project, the team at the University of Sussex is responsible for the collection and analysis of a large dataset concerning electric vehicle charging. This data will use our in-house software to discover and collect and analyse data on several social media platforms including Twitter, Facebook, Instagram, YouTube and Reddit.

On both projects, your role will be to advise on the likely effectiveness of different approaches, carry out analysis and evaluation of methods based on data available data and prototype innovative solutions. Your role will involve the implementation cutting-edge academic solutions for relevancy matching, using deep neural networks applied to language, and their application in this domain to demonstrate feasibility and deliver a proof-of-concept. You will need to document and characterising the advantages and disadvantages of each method. As part of the role, you will be required to write scientific papers and monthly reports. On MeeTooSaives you will also participate in quarterly consortium meetings and contribute support on other work packages as required. For example, in the Enhanced Peer-Support work package, AI is being deployed to monitor posts and predict/identify risk and in the Concurrent user-centre evaluation work package, led by the University of Bristol, id-depth qualitative research is being carried out in the the acceptability of newly designed and implemented practical innovations from the other work packages. User evaluation will be a critical driver in the development of practical in-domain solutions for relevancy matching.

Key Requirements. This post is suited to a highly motivated individual with excellent scientific and technical skills, and a willingness to publish in high profile venues. The candidate should have significant experience in natural language processing, machine learning and knowledge representation as well as a willingness to operate in a dynamic research environment within an international team.

Candidates should have a PhD in computer science or an equivalent field, combined with a strong background in natural language processing and machine learning. The candidates should have demonstrable experience in python programming and knowledge of various libraries used by the community e.g., pytorch, tensorflow and huggingface.

Background. The AI Research Group at the University of Sussex was created through the merger of the Evolutionary and Adaptive Systems (EASy) and the Data Science groups. We conduct research and teach a wide range of AI related topics, often cross-disciplinary and with a unique Sussex angle. We collaborate internationally and locally with academics, businesses and public stakeholders, working at the frontiers of knowledge, on solving real-world problems, and in policy and public outreach. Dr Weeds co-directs [The Data Intensive Science Center, University of Sussex \(DISCUS\)](#) with Prof Oliver in the School of Mathematics and Physics. DISCUS is concerned with the application of modern Data Science and Machine Learning to real world problems and research in other disciplines.

Advantages and career development. This position is ideally suited for somebody who wants to advance their career in the rapidly expanding field of natural language processing. This project will provide an opportunity to publish and present in high-impact journals and conferences. The project has the potential to lead to a spin-off, further industrial collaboration and broad networking opportunities.

Please contact Dr Julie Weeds (j.e.weeds@sussex.ac.uk) or Professor David Weir (d.j.weir@sussex.ac.uk) for informal enquiries.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STEMM) at Sussex.

For full details and how to apply see our [vacancies page](#)

The University of Sussex values the diversity of its staff and students and we welcome

applicants from all backgrounds.

You can find out more about our values and our EDI Strategy, [Inclusive Sussex](#), on our webpages.

The University requires that work undertaken for the University is performed from the UK.

Visa Sponsorship Queries:

- This role has been assigned an eligible SOC code and meets the salary requirements for Skilled Worker Sponsorship if full time. Please consult our [Skilled Worker Visa information page](#) for further information about Visa Sponsorship.
- Please note that this position may be subject to [ATAS clearance](#) if you require visa sponsorship.

2. The School / Division

Please find further information regarding the school/division at <http://www.sussex.ac.uk/informatics/>

3. Job Description

Job Description for the post of: Research Fellow in Natural Language Processing

Department: Informatics

Section/Unit/School: School of Engineering and Informatics

Location: AI Group, Chichester 1

Grade: 7/8

Responsible to: Dr Julie Weeds and Prof David Weir

KEY RESPONSIBILITIES

1. Research, Scholarship & Enterprise

- 1.1 Develop research objectives and proposals for own or joint research, at acceptable levels, with assistance if required.
- 1.2 Conduct research projects individually and in collaboration with others.
- 1.3 Analyse and interpret research findings and draw conclusions on the outcomes.

- 1.4 Produce high-quality research outputs for publication in monographs or recognised high-quality journals, or performance/exhibition, as appropriate, and contribute to the School's REF submission at acceptable levels of volume and academic excellence.
- 1.5 Contribute to the preparation of proposals and applications to external bodies, for example for funding purposes.
- 1.6 Individually or with colleagues, explore opportunities for enterprise activity, knowledge exchange income and/or consultancy, where permissible.
- 1.7 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.
- 1.8 Continually update knowledge and understanding in field or specialism, and engage in continuous professional development.

2. Teaching & Student Support

- 2.1 Undertake teaching duties, if required.
- 2.2 Assist in the assessment of student knowledge and supervision of student projects if required.
- 2.3 Assist in the development of student research skills, for example as part of a postgraduate supervision team.

3. Contribution to School & University

- 3.1 Attend and contribute to relevant School and project meetings.
- 3.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

4. Role-specific duties

- 4.1 Implement and evaluate various approaches for relevancy matching, using deep neural networks applied to language, in the MeeToo domain
- 4.2 Document and characterise the advantages and disadvantages of each approach
- 4.3 Engage and collaborate with the project's core team to implement functional prototypes
- 4.4 Support the commercialization of the developed technologies
- 4.5 Publish scientific results in high quality journals and present your work at international conferences.
- 4.6 Generate innovation ideas which may result in patents
- 4.7 Exchange expertise with PhD students and colleagues

- 4.8 Collaborate with the consortium partners as well as industrial partners, generate deliverables and reports and assist with flow of information among stakeholders

This Job Description sets out current duties of the post that may vary from time to time without changing the general character of the post or level of responsibility entailed.

INDICATIVE PERFORMANCE CRITERIA

- A PhD or equivalent scholarly or relevant professional activity
- Pursuing a line of independent research within a research group.
- Publishing research (either from a recently completed PhD or new original research).
- Other forms of externally recognised professional practice of creative output of a standing equivalent to regular publication of original research.
- Initiating, developing or participating in links between the University and external bodies such as business and industry, the professions, community organisations and policy-makers.
- Evidence of successful engagement in teaching or supervision.

4. Person Specification

ESSENTIAL CRITERIA

1. Educated to doctoral level, or other equivalent qualification, or appropriate level of experience, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of engagement in high-quality research activity.
3. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
4. Ability to work individually on own initiative and without close supervision, and as part of a team.
5. Ability to exercise a degree of innovation and creative problem-solving.
6. Excellent organisational and administrative skills.
7. Ability to prioritise and meet deadlines.

8. Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA

1. Demonstrable expertise in natural language processing including neural networks, latent representations / embeddings and semantic matching
2. Experience in python programming including pytorch, tensorflow and huggingface
3. Knowledge of the ethical implications of AI research and an interest in the application of AI for human / social good

DESIRABLE CRITERIA

1. Experience with deep neural networks and transfer learning, including BERT and various derivatives.
2. Demonstrable expertise in Information Retrieval, web-scraping and social media analysis
3. Successful track record in publishing at top-tier NLP venues such as ACL and EMNLP