1 Advertisement

Post Title: Research Fellow in Inclusive Green Infrastructures  
School/department: School of Engineering and Informatics  
Hours: 0.35 FTE  
Contract: Fixed term for 21 months with the possibility of extension  
Reference: 2813  
Salary: Grade 7, starting at £33,797 and rising to £40,322 per annum pro rata  
Closing date: 10 December 2019. Applications must be received by midnight of the closing date.  
Expected Interview date: 18 December 2019.  
Expected start date: January 2020

The Data Science group is seeking a Research Fellow to assist with a British Academy project “Inclusive Green Infrastructure for Urban Well-Being”. The successful candidate will be based at the Department of Informatics at the University of Sussex School of Engineering and Informatics, and will become a member of the Predictive Analytics (PAL) Lab. In addition to undertaking high quality research and publishing in top machine learning and computer vision conferences/journals including NeurIPS, ICML, CVPR, and TPAMI, the PAL group also creates significant impact by providing support, technology, and highly-trained specialists to a new generation of technology companies/charity foundations.

The goal of the project is to develop a novel transdisciplinary methodology for city-region land-use mapping and analysing how land-use change impacts green infrastructures, environmental services, and well-being. This is a new project including collaborators from the Science Policy Research Unit (SPRU), University of Sussex, Centre of Social Medicine and Community Health, Jawaharlal Nehru University, and School of Publication Administration, Zhongnan University of Economics and Law.

Applicants must have a Bachelor’s or Master’s degree in computer science, statistics, physics, mathematics (or related disciplines), and experience with the Ruby on Rails and Stimulus web development frameworks. Experience with Javascript mapping libraries such as Leaflet or OpenLayers, as well as frontend UI/UX development with libraries such as Bootstrap is a distinct advantage. Informal enquiries are welcome and can be made to Novi Quadrianto, Reader in Machine Learning (N.Quadrianto@sussex.ac.uk), or Fiona Marshall, Professor of Environment & Development (F.Marshall@sussex.ac.uk).

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

*The University of Sussex is committed to equality of opportunity*

2. Senior leadership and management

The Vice-Chancellor (Professor Adam Tickell) is the senior academic officer and, as Chief Executive, is responsible to the University Council for management of the
University. He is supported by an executive group which includes the three Pro-Vice-Chancellors, the Registrar and Secretary, the Director of Finance and the Director of Human Resources. The Heads of the Schools of Studies at Sussex report to the Pro-Vice-Chancellors.

The Registrar and Secretary heads the Professional Services of the University. In addition, under the University Statutes, the Registrar and Secretary is Secretary to the University Council. The Director of Finance reports to the Vice-Chancellor. The Director of ITS reports to the Registrar and Secretary, and the Librarian reports to one of the Pro-Vice-Chancellors.

3. The School / Division

Although the successful candidate will be based in the School of Engineering and Informatics, researchers on this project also come from the School of Business, Management, and Economics.

School of Engineering and Informatics

The School of Engineering and Informatics covers the disciplines of computer, electrical and electronic engineering, mechanical, and automotive engineering, product design, digital media, computer science and informatics. Distinctive characteristics of the School are: creativity, interdisciplinarity, strong links with industry, and an international outlook in both research and teaching. £10m (£4.9m from HEFCE) is being invested in a new Computing, Robotics, Electronics and Mechatronics Centre (CREaM), as a result of a 60% surge in applications for the School’s degrees.

The School offers a range of undergraduate and postgraduate degrees in its areas of expertise, of ten in collaboration with other schools at Sussex, to create a distinctive focus that addresses the needs of industry, commerce and society. Examples include joint degrees with the MSc in Data Science that includes modules from the Schools of Engineering and Informatics, School of Mathematical and Physical Sciences and School of Life Sciences; and the MScs in Engineering Business Management, and Management of Information Technology, which were developed in collaboration with the School of Business, Management and Economics. This interdisciplinary approach also applies to our research, with current and recent externally funded projects with researchers in a wide range of other subject areas including: geomorphology, media practice, medical imaging, neuroscience, anthropology, English literature, epidemiology, geography, international development, mathematics, psychiatry, psychology and sociology.

The Department of Informatics sits in the School of Engineering & Informatics. As well as teaching and research in core aspects of computer science and software systems, Informatics at Sussex is internationally renowned centre for the study of artificial intelligence, bio-inspired computing, cognitive science, digital media technologies, and human-computer interaction. The quality of our teaching, student support and facilities is rated highly; for example, the Guardian University Guide 2012 ranks us in the top 10 Computer Science and IT departments in the UK. In the 2010 National Student Survey, we are ranked 3rd for student satisfaction out of all
computing departments in the UK. All of our degree programmes are informed by high quality research. In the most recent national assessment of research quality, Informatics at Sussex is in the top 15 in the subject nationally, based on volume of research activity rated as world-leading or internationally excellent.

More information at [http://www.sussex.ac.uk/ei/](http://www.sussex.ac.uk/ei/).

**School of Business, Management and Economics**
The School of Business, Management & Economics (BMEc) is comprised of three academic departments, each internationally renowned for its research and teaching excellence. These are: the Department of Business and Management; the Department of Economics, and SPRU (the Science Policy Research Unit). The School provides leadership in the development and dissemination of sustainable business and management practices, informed by sound economic logic and a deep understanding of policy making. With a new, state-of-the-art academic building at the heart of the campus, BMEc is a vibrant, ambitious and dynamic School with a strong research focus.

More information at [www.sussex.ac.uk/bmec](http://www.sussex.ac.uk/bmec).

**CORE JOB DESCRIPTION**

- **Job Title:** Research Fellow in Inclusive Green Infrastructures
- **Grade:** Research Fellow, Grade 7
- **School:** Engineering and Informatics
- **Location:** Falmer Campus, Brighton, UK
- **Responsible to:** Principal Investigator through to Head of School
- **Direct reports:** n/a
- **Key contacts:** Members of research group, members of faculty within the School and University.

**Role description:** Research Fellow I is an early career-grade research position. Post-holders will be expected to contribute to the work of the research team, and also to develop their research skills with support from more experienced members of staff.

**PRINCIPAL ACCOUNTABILITIES**
1. To observe and assist with individual and/or collaborative research activity and contribute to the production of research outputs for publications.

KEY RESPONSIBILITIES

1. Research, Scholarship & Enterprise

1.1 With support from the Principal Investigator, develop research objectives and contribute to the planning of the research project.

1.2 Conduct research activity under supervision of the Principal Investigator, and in collaboration with others.

1.3 Assist with the analysis and interpretation of research findings and contribute to discussions on conclusions and outcomes.

1.4 Contribute to the writing of reports and other dissemination activities under the supervision of experienced researchers.

1.5 Contribute to the preparation of research ethics and data management strategies, under guidance from the Principal Investigator to ensure compliance with ethical approval and data protection legislation.

1.6 Present information on research progress and outcomes to relevant bodies under the supervision of the Principal Investigator.

1.7 Plan own day-to-day research activity within the framework of the agreed programme.

1.8 Learn about the publication process and contribute to research outputs for publication in monographs or recognised high-quality journals, or performance/exhibition, as appropriate.

1.9 Continually update knowledge and understanding in field or specialism, and engage in professional development.

2. Teaching & Student Support

2.1 Assist in the supervision of student projects and provide guidance to those assisting in the research.

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 Develop a deep convolutional neural network model for semantic segmentation and/or object detection of image and video data.

4.2 Develop a model that can be deployed on a hardware with limited memory and computational capability.

4.3 Investigate techniques such as data augmentation, generative adversarial network, fine-tuning, and distillation to boost the performance of the model.

4.4 Produce user-friendly platforms and interactive maps to communicate new insights and support stakeholder engagement.

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

- Under the supervision of the Principal Investigator, conduct experiments/research to assist with project aims, with emphasis on training.

- Undertake research by preparing, setting up, conducting and recording the outcomes.

- Manage and analyse data, and prepare written reports and summaries.

- Maintain and store project files and equipment as per health and safety and data regulations.

- As part of career development, contribute to the preparation of journal articles based on the research with support from the Principal Investigator.
PERSON SPECIFICATION

ESSENTIAL CRITERIA

1. Normally educated to degree level, or other equivalent qualification, or relevant level of experience, as appropriate to the discipline (see role-specific criteria below).

2. Good presentation skills, with the ability to communicate effectively, both orally and in writing, with colleagues and external audiences.

3. Ability to work independently (under supervision by the Principal Investigator), and as part of a team.

4. Ability to exercise a degree of innovation and creative problem-solving.

5. Excellent organisational and administrative skills.

6. Ability to prioritise and meet deadlines.

7. Excellent IT skills.

8. Ability to follow guidance of team leaders.

ESSENTIAL ROLE-SPECIFIC CRITERIA

9. Completion of a Bachelor’s or Master’s degree in Computer Science, Statistics, Physics, Mathematics or related disciplines.


11. High proficiency in programming with languages such as Python, MATLAB, R, or C++.

DESIRABLE CRITERIA

1. Experience with Javascript mapping libraries such as Leaflet or OpenLayers.

2. Experience with UI/UX development with libraries such as Bootstrap.

3. Experience with deep convolutional neural network models.

4. Experience with toolboxes such as Theano, Tensorflow, MXNet, or Caffe.

5. Experience with a data visualisation library such as D3 or Gephi.
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 and engineering at Sussex.