1   Advertisement

Post Title: Research Assistant in Electric Vehicle Market Optimisation
School/department: Engineering and Informatics / Engineering and Design
Hours: Full-time or part-time hours considered up to a maximum of 1.0 FTE
Requests for <u>flexible working</u> options will be considered (subject to business need).
Location: Brighton, UK
Contract: Fixed term until 31st May 2024
Reference: 20914
Salary: starting at £32,411 to £39,592 per annum, pro rata if part-time
Placed on: 07 June 2023
Closing date: 21 June 2023. Applications must be received by midnight of the closing date.
Expected Interview date: To be confirmed
Expected start date: As soon as possible

This vacancy is only open to those currently employed by the University of Sussex (Including those employed through Reed, Chartwells, and SEF).

The Department of Engineering and Design carries out high-quality research activities over several strategic research areas. We have excellent facilities and laboratories, and 88% of our research outputs and 90% of our research impact are categorised as world leading or internationally excellent in the 2014 Research Excellence Framework (REF).

We are seeking to fill a research post for an exciting research project that we participate in. The details are as follows:

- We are one of the 32 partners involved in the major EU H2020-funded project eCharge4Drivers (https://echarge4drivers.eu/).
- eCharge4Drivers works to improve the Electric-Vehicle (EV) charging experience in urban areas and on interurban corridors, making it more convenient for users to go green!
- The Sussex team is responsible for leading the development of EV charging market models of user charging behaviour. Data from the project's demonstrators and modelling techniques will be used to increase charging infrastructure and services uptake.
- We are looking for a graduate researcher to implement the above task.

You will have the opportunity to:

- Develop advanced mathematical and engineering modelling techniques that also transcend several other fields (such as behavioural science, finance) and cover most aspects of EV charging, from the user perspective.
- Participate in a supportive research environment, which values diversity and the wellbeing and professional development of researchers.
- Engage with major international partners from across Europe, at the forefront of EV research.

You will bring good analytical skills and the ability to translate abstract concepts to novel mathematical models. You will also be able to communicate these concepts and models professionally, in written and oral form, to academic, policy and non-academic audiences. The full list of requirements can be found in the further particulars.

Please contact Peter Fussey (p.m.fussey@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.

Please note that this position may be subject to [ATAS clearance](#) if you require visa sponsorship.

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.

2.   The School

Please find further information regarding the School at https://www.sussex.ac.uk/ei/

3.   Recruitment process notes

As part of the interview process, short-listed candidates will be required to provide a short presentation, in order to demonstrate their fit with the criteria laid out in this document. The identity of such short-listed candidates will therefore be known to those who attend the presentations, and the names, application and lists of publications of short-listed candidates will have been available in School Offices to members of the Engineering and Design Department (School of Engineering and Informatics). However, applicants may specify at the time of applying that their application should remain confidential throughout the appointing process. Please indicate whether you wish this to be the case for your application, in which case appropriate arrangements to maintain confidentiality will be made.

### 3.	Job Description

Job Title: Research Assistant in Electric Vehicle Market Optimisation

Grade: Research Assistant, Grade 6

School: Engineering and Informatics

Location: TFMRC

Responsible to: Principal Investigator, Peter Fussey

Direct reports: n/a

Key contacts: Members of research group, members of faculty within the School and University.

Role description: Research Assistant is a pre-Doctoral 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 assist with 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

2.1 Attend and contribute to relevant School and project meetings.

2.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

4. Role-specific duties

4.1 Undertake academic research to develop a novel market model for electric vehicles based on an Agent Based Modelling (ABM) approach, using the MESA Python framework.

4.2 Use the ABM to apply optimisation techniques such as revenue management, reinforcement learning and/or game theory. The aim of the optimisation will be to understand and optimise user uptake of electric vehicles.

4.3 Engage with the eC4D consortium partners, in order to coordinate with other project tasks and make the model relevant to the context of the project.

4.4 Compile academic publications based on the outcomes of the work and present them in written and oral form to suitable high-impact conferences, journals and other outlets as appropriate.

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

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

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

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

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

5. 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

1. A Masters in Engineering, Mathematics or related Scientific subject where modelling and simulation has been applied.

2. Experience of using Python and managing software development, preferably with a team environment.

DESIRABLE CRITERIA

1. Some experience in optimal control, machine learning or game theory.