



**Faculty of Technology**

**Department of Mathematics**

**Research Fellow in Applied Operational Research/Railway Logistics**

**ZZ004260**

**Information for Candidates**

**THE POST**

Please see the attached job description and person specification.

**TERMS OF APPOINTMENT**

**Fixed-term contract to 30 April 2019**

Salary is in the range from £34,520 to £37,706 and progress to the top of the scale is by annual increments payable on 1 September each year. Salary is paid into a bank or building society monthly in arrears.

Working hours are 37 per week and are usually worked between 8.30 am and 5.15 pm Monday to Thursday and between 8.30 am and 4.15 pm on Friday with one hour and ten minutes for lunch. As this post is research based, working hours will vary depending on the needs of the project so a flexible approach is required. Specific working hours will be agreed once an appointment has been made. Overtime is not normally payable but time off in lieu may be given.

Annual leave entitlement is 35 working days in a full leave year. The leave year commences on 1 October and staff starting and leaving during that period accrue leave on a pro-rata basis. In addition, the University is normally closed from Christmas Eve until New Year’s Day inclusive and on bank holidays.

The Appointee will be entitled to join the Local Government Pension Scheme. The scheme's provisions include a final salary based, index-linked pension with an option to exchange some pension for a lump sum on retirement together with dependants’ benefits. Contributions by the employee are subject to tax relief.

There is a probationary period of six months during which new staff are expected to demonstrate their suitability for the post.

It is a condition of the appointment for the proper performance of the duties of the post that the appointee will take up residence at a location such that they are able to fulfil the full range of their contractual duties. This residential requirement will be expected to be fulfilled within twelve months of taking up the appointment. The University has a scheme of financial assistance towards the cost of relocation, details of which can be found on the University website:

<http://www.port.ac.uk/departments/services/humanresources/recruitmentandselection/informationforapplicants/removalandseparationguidelines>

There is a comprehensive sickness and maternity benefits scheme.

**All interview applicants will be required to bring their passport or full birth certificate and any other 'Right to Work' information to interview where it will be copied and verified.** The successful applicant will not be able to start work until their right to work documentation has been verified.

Please note if you are the successful candidate once the verbal offer of employment has been made and accepted, references will be immediately requested. It is the University’s policy that all employment covering the past three years is referenced. A minimum of two references is required to cover this three year period of employment or study (where there has been no employment). One of your referees mustbeyour current or most recent employer.

The successful candidate will need to bring documentary evidence of their qualifications to Human Resources on taking up their appointment.

To comply with UKVI legislation, non-EEA candidates are only eligible to apply for this post if it has been advertised for a total of 28 days.

If the position has a requirement for Disclosure and Barring Service check (DBS), this will be stated in the advert. The DBS Application Form will be provided once the selection process has been completed.

All applications must be submitted by Midnight (GMT) on the closing date published.

**UNIVERSITY OF PORTSMOUTH – RECRUITMENT PAPERWORK**

1. **JOB DESCRIPTION**

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| **Job Title:** | Research Fellow |
| **Faculty/Centre:** | Faculty of Technology |
| **Grade:** | 7 |
| **Department/Service:**  **Location:** | Department of Mathematics  Lion Gate Building |
| **Position Reference No:** | ZZ004260 |
| **Responsible to:** | Prof Djamila Ouelhadj, Head of Logistics, Operational Research , and Analytics Group |
| **Responsible for:** | - |
| **Effective date of job description:** | October 2017 |

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| **Purpose of Job:** |
| The researcher will work on a project funded by RSSB (Rail Safety and Standards Board). This is a collaborative multi-disciplinary project involving the University of Portsmouth, Cubic Transportation Systems Ltd., Transport Systems Catapult, Chiltern Railways, Transport for London, Arriva UK Trains Ltd.  This project will develop and operationally demonstrate a gateline that is capable of automatically self-reconfiguring in order to maximise peak throughput and manage average throughput to prevent station overcrowding. The gateline will reconfigure without manual supervision, freeing the staff at the gates to engage and support customers. It will remove the requirement on those staff to make operational decisions on gate configuration or temporary station closure, which if sub-optimal, adversely affect network capacity, safety and customer experience. This project will demonstrate to Train Operating Companies (TOCs), supply chain and relevant stakeholders the commercial viability and operational benefits of this enhanced product offering.  The research fellow will work on the development of Intelligent gatelines; using situational awareness to improve customer experience, gate throughput and increase gateline staff effectiveness at mainline and metro stations. This will include the design and implementation of real-time predictions of crowding at the stations and the length of the queues at the gates; design and implementation of the optimal configuration of gates to use in both directions and the maximum throughput of each gate. The real time predictions on passenger crowding will be used to determine the optimal gate line configuration to minimise congestion on the platform and maximise passenger safety and comfort.  The research fellow will be responsible for taking a lead in the development and coding of these models and algorithms and production of testing. The research fellow will liaise with the academics at the University of Portsmouth and the industrial partners involved in the project in order to achieve this goal. The models and algorithms developed are expected to be of sufficient scientific novelty and application worth that they will lead to articles published in leading Operational Research and Transport scientific journals. The research fellow is also expected to disseminate the research findings at project meetings, international conferences, and industrial events. As an experiencing researcher, they also be responsible for the supporting general research activity in the Logistics, Operational Research, and Analytics group and encouraging more junior researchers such as PhD students in their research. |

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| **Key Responsibilities:** |
| 1. To manage and be responsible for the completion of the proposed research project, ensuring that aims and objectives and deliverables are met in a timely manner. 2. To present algorithms, decision support tools, and research project findings to a variety of stakeholders and to write papers for refereed journals and project reports.   Additional expectations of the role holder   1. To communicate with team members and liaise and network with relevant other professional bodies 2. To contribute to both internal and external project meetings providing relevant and timely information, in order to aid decision making 3. To solve problems that occur during the length of the research project applying knowledge of subject area 4. To contribute to seminars and discussions in the Department. 5. To contribute to public outreach activities 6. To participate in and contribute to a performance & development review (PDR), ensuring that work produced is in line with the Department/Faculty/University aims 7. To comply with the University's Health and Safety Policy and pay due care to own safety and the safety of others. Report all accidents, near misses and unsafe circumstances to line management 8. Any other duties as required by the Head of Department. |

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| **Working Relationships (key individuals the job holder would be working with):** |
| 1. Managed by Prof. Andrew Osbaldestion, Head of the Department of Mathematics and Prof Djamila Ouelhadj for day to day management. 2. Other members of the Logistics, Operational Research, and Analytics group and the industrial partners; support/technical staff on day-to-day issues; associates operating in the same area. |

1. **PERSON SPECIFICATION**

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| **No** | **Attributes** | **Rating** | **Source** |
| **1.** | **Specific Knowledge & Experience** |  |  |
| 1.1 | Knowledge of Operational Research, Logistics, or related discipline. | E | AF, S |
| 1.2 | Knowledge of Railway transport sector | D | AF, S |
| 1.3 | Experience of developing Operational Research or Logistics optimisation models and algorithms | E | AF, S |
| 1.4 | Experience in writing research articles for leading international journals | E | AF, S |
| 1.5 | Experience in dealing with industrial and/or governmental stakeholders and solving real world problems | D | AF, S |
| **2.** | **Skills & Abilities** |  |  |
| 2.1 | Ability to plan, organise and prioritise workloads | E | AF, R, S |
| 2.2 | Good communication and interpersonal skills | E | AF, R, S |
| 2.3 | Writing research papers and/or project reports | E | AF,S |
| 2.4 | Excellent presentation skills | E | R, S |
| 2.5 | Project Management skills | D | AF, R, S |
| 2.6 | Computational and programming skills | E | AF,S |
| **3.** | **Qualifications, Education & Training** |  |  |
| 3.1 | Completed PhD in relevant subject | E | AF |
| 3.2 | Refereed publications in leading international journals | D | AF |
| **4.** | **Other Requirements** |  |  |
| 4.1 | Ability to motivate and engage others in research | D | AF, R, S |
| 4.2 | Ability to work on own initiative and as part of a team | E | AF, R, S |
| 4.3 | Ability to work to tight deadlines | E | AF, R, S |
| 4.4 | Willingness to undertake travel to industrial and project partners | E | AF,S |

**Legend**

Rating of attribute: E = essential; D = desirable

Source of evidence: AF = Application Form; R = References; S = Selection Programme (including Test, Presentation, References)

**JOB HAZARD IDENTIFICATION FORM**

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| **Please tick box(s) if any of the below are likely to be encountered in this role. This is in order to identify potential job related hazards and minimise associated health effects as far as possible. Please use the** [**Job Hazard Information**](http://www.port.ac.uk/departments/services/humanresources/occupationalhealthservice/jobhazardinformation/filetodownload,164407,en.doc) **document in order to do this.** | | | |
| 1. International travel/Fieldwork   **To attend conferences & to present papers etc.** | X | 13. Substances to which COSHH regulations apply (including microorganisms, animal allergens, wood dust, chemicals, skin sensitizers and irritants) |  |
| 1. Manual Handling (of loads/people) |  | 14. Working at height |  |
| 1. Human tissue/body fluids (e.g. Healthcare workers, First Aiders, Nursery workers, Laboratory workers) |  | 15. Working with sewage, drains, river or canal water |  |
| 1. Genetically modified Organisms |  | 16. Confined spaces |  |
| 1. Noise > 80 DbA |  | 17. Vibrating tools |  |
| 1. Night Working   (between 2200 hrs and 0600 hrs) |  | 18. Diving |  |
| 1. Display screen equipment (including lone working) | X | 19. Compressed gases |  |
| 1. Repetitive tasks (e.g. pipette use, book sensitization etc) |  | 20. Small print/colour coding |  |
| 1. Ionising radiation/ non-ionising radiation/lasers/UV radiation | | 21. Contaminated soil/bioaerosols |  |
| 10. Asbestos and lead | | 22. Nanomaterials | |
| 11. Driving on University business (mini-bus, van, bus, forklift truck etc) | | 23. Workplace stressors (e.g. workload, relationships, job role etc) | |
| 12. Food handling | | 24. Other (please specify) | |

**Completed by Line Manager/Supervisor:**

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| **Name (block capitals)** | Prof. Djamila Ouelhadj |
| **Date** | October 2017 |
| **Extension number** | 6355 |

Managers should use this form and the information contained in it during induction of new staff to identify any training needs or requirement for referral to Occupational Health (OH).

Should any of this associated information be unavailable please contact OH (Tel: 023 9284 3187) so that appropriate advice can be given.