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**RESOURCING/**

**JOB DESCRIPTION:**

**Postdoctoral Research Associate**

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| **Ref Number:** | **Cost code:** |
| **Salary Scale:** | **Grade 7: £36,386-£40,931 per annum (pro rata)** |
| **Contract:** | **For a fixed term period of 24 months and full-time** |
| **School/Department:** | **Kent Business School** |
| **Location:** | **University of Kent, Canterbury campus** |
| **Responsible to:** | **Prof Maria Paola Scaparra** |
| **Expected start date:** | **January 2023** |

**The Role**

Applications are invited for a 2-year Postdoctoral Research Associate (PDRA) position in the area of Operational Research (Optimisation) starting in January 2023 or soon thereafter. The PDRA will join the Department of Analytics, Operations and Systems (DAOS) in Kent Business School. The successful candidate will work closely with Prof Maria Paola Scaparra and other DAOS academics with the primary goals of publishing in top operational research journals and generating impactful research. The PDRA will have wide latitude to help frame and design the specific programme of research. Potential areas of investigation include, but are not limited to, sustainable development, disaster management, healthcare, transportation, and infrastructure planning. The post holder will further assist in the preparation of grant applications and support the research culture of the Business School by attending and contributing to relevant meetings, research seminars, and workshops.

Applicants should hold a PhD in Operational Research, Management Science, Business Analytics, Mathematics, Computer Science or a closely related discipline. The ideal candidate will have a firm knowledge of optimisation modelling, for example combinatorial, stochastic and robust optimisation, and exact and meta-heuristic solution approaches. Knowledge of optimisation software, good computer programming experience, as well as excellent written and communication skills are essential. Applications will be assessed based on relevant skills and previous publication record.

**Key Accountabilities / Primary Responsibilities**

The successful candidate will:

* Develop a research programme on the use of optimisation methods to address key societal, economic and/or environmental challenges in areas such as sustainable development, disaster management, healthcare, transportation, and infrastructure planning.
* Develop novel mathematical models and solution approaches which extend the boundaries of current knowledge and can be applied in practice.
* Seek opportunities to apply research findings by engaging with relevant stakeholders throughout the project.
* Disseminate research findings through publication in peer-reviewed academic journals, conference presentations, seminars, and media.
* Contribute to the writing of research proposals to secure external funding.

**Key Duties**

With the support of Prof Maria Paola Scaparra and other DAOS academics, the post holder will be expected to:

* Review the scientific literature relevant to the research programme agreed with the supervisor.
* Work with a wide range of stakeholders to obtain information used in the modelling process, potentially involving the use of facilitation, problem structuring methods, and other Soft OR techniques.
* Identify sources of existing data and initiate new data collection activities to address any data gaps.
* Develop advanced optimisation-based mathematical models and, if required, exact and heuristic approaches to solve realistic problem instances.
* Test the modelling approach on both random instances and real case studies.
* Write up the research outcomes for publication in leading peer-reviewed journals.
* Disseminate findings to a wider audience including non-scientists and project stakeholders.
* Engage in continuous professional development.
* Contribute to the KBS research and innovation culture by attending and contributing to department meetings, research seminars and workshops.
* Contribute to some teaching activities and student project supervision if required.

**Health, Safety & Wellbeing Considerations**

This role involves undertaking duties which include the Health, Safety and wellbeing issues outlined below. Please be aware of these, when considering your suitability for the role.

* Regular use of Screen Display Equipment

**Internal & External Relationships**

**Internal:** Staff within the Kent Business School and more widely across the University.

**External:** depending on the nature of the agreed research programme, the post holder will be working with academics from other institutions, possibly including institutions in developing countries, and with a variety of regional, national or international organisations (e.g., NHS, logistics and transport companies).

**Person Specification**

The Person Specification details the necessary skills, qualifications, experience or other attributes needed to carry out the job. Please be aware that your application will be measured against the criteria published below.

Selection panels will be looking for clear evidence and examples in your application, or in your cover letter where applicable, which back-up any assertions you make in relation to each criterion.

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| **Qualifications / Training** | **Essential** | **Desirable** | **Assessed via\*** |
| A PhD degree in Operational Research, Management Science, Business Analytics, Mathematics, Computer Science, or a related discipline. | **✓** |  | **A** |

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| **Experience / Knowledge** | **Essential** | **Desirable** | **Assessed via\*** |
| Knowledge of mathematical programming | **✓** |  | **A** |
| Experience with optimisation software (e.g., Cplex, Gurobi, COIN-OR) and modelling languages (e.g., OPL, GAMS, AMPL). | **✓** |  | **A** |
| Computer programming knowledge (e.g. Java, C++, Python, or similar). | **✓** |  | **A** |
| Experience developing and applying metaheuristic solution methods. |  | **✓** | **A, I** |
| Knowledge in the fields of sustainable development, disaster management, healthcare, transportation, or infrastructure planning. |  | **✓** | **A, I** |
| A record of publications in quality peer reviewed journals, commensurate with stage of career. | **✓** |  | **A** |
| Training or experience in problem structuring methods and Soft OR. |  | **✓** | **A** |
| Experience in developing research proposals and/or working on externally funded projects. |  | **✓** | **A, I** |

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| **Skills / Abilities** | **Essential** | **Desirable** | **Assessed via\*** |
| Strong mathematical and logical reasoning skills. | **✓** |  | **A** |
| Good IT skills. | **✓** |  | **A** |
| Ability to communicate clearly and effectively both spoken and written. | **✓** |  | **A, I** |
| Good presentation skills. | **✓** |  | **I** |
| Excellent interpersonal skills. | **✓** |  | **I** |
| Proven time management skills and ability to meet deadlines. | **✓** |  | **A, I** |
| Ability to work independently, use initiative, and work creatively to resolve technical problems. | **✓** |  | **A, I** |

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| **Additional Attributes** | **Essential** | **Desirable** | **Assessed via\*** |
| Commitment to deliver within deadlines | **✓** |  | **A, I** |
| Continued interest to develop professional profile, knowledge and skills | **✓** |  | **A, I** |
| Willingness to supervise student projects | **✓** |  | **I** |
| Ability to collaborate with colleagues within and beyond the School | **✓** |  | **I** |
| Ability to plan and manage own research activity | **✓** |  | **A, I** |
| Interest to promote research using a range of media (e.g., social media) |  | **✓** | **I** |

**\*Criterion to be assessed via:**

**A = application form or CV/cover letter**

**I = interview questions**

**T = test or presentation at interview**