



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Postdoctoral Research Fellow in Optimisation for Decision Support in Disaster Response
Analytics, Technology and Operations Department
Leeds University Business School**



Salary: Grade 7 (£41,064 – £48,822 p.a. depending on experience)

Reporting to: Prof. Sgalambro and Dr. Shiri

Reference: BUSAT1006

Fixed term (18 months): To complete specific time limited work funded by SIREN project.

Location: University of Leeds campus (with scope for some hybrid working)

'We are open to discussing flexible working arrangements.'

Overview of the Role

Are you an ambitious researcher looking for your next challenge? Do you have a background in operations research, optimisation, or analytical modelling for decision support? Do you want to further your career in one of the UK's leading research-intensive universities?

We are seeking to recruit a Postdoctoral Research Fellow to develop and apply advanced decision-support models for disaster response operations, with specific emphasis on debris operations management and wildfire suppression. The post will be based within Leeds University Business School, in the Analytics, Technology and Operations Department (ATOD), and forms part of the international ITEA4 SIREN project, which focuses on evidence-based, data-driven support for disaster management and emergency response decision making.

As a member of ATOD, you will join a growing community of scholars working at the intersection of analytics, optimisation, technology, and operational decision making. You will have opportunities to collaborate with interdisciplinary research centres across the School, engage with partners in the SIREN consortium, and contribute to a vibrant environment that supports innovative, impactful research in operations and analytics.

The post holder will develop new optimisation models and algorithms to support operational and real-time decision making in disaster response contexts, with the aim of improving resource allocation and system performance under uncertainty. This includes formulating complex decision problems, designing deterministic and real-time solution methods, and contributing to high-quality academic publications and project dissemination.

Main duties and responsibilities

- Working with and in support of Prof Sgalambro's and Dr Shiri's research grant to ensure the project is successfully completed;
- conduct literature reviews in disaster operations, optimisation, and real-time decision making
- conceptualise and mathematically formulate decision problems in debris operations management and wildfire suppression



- design and develop deterministic optimisation models and algorithms, including exact approaches (e.g. branch-and-price / column generation / decomposition) and heuristic methods
- design and develop real-time optimisation algorithms (e.g. online heuristics, reinforcement learning based techniques)
- conduct computational experiments and benchmarking studies
- develop high-quality academic manuscripts targeting leading journals ranked at least 4 in the Chartered Association of Business Schools (CABS) Academic Journal Guide
- contribute to dissemination and collaborative research activities within the SIREN consortium and academic community
- contributing to the research culture of the School, where appropriate

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

Qualifications and skills

Essential

- A first degree and PhD (or close to completion) in Operations Research or a closely allied discipline;
- demonstrable expertise in deterministic optimisation modelling and algorithm development;
- demonstrable experience in modelling decision problems under uncertainty (e.g. stochastic formulations, robust optimisation, scenario-based methods);
- evidence of previous experience and strong programming skills in Python;
- experience in integrating Python with optimisation solvers, including CPLEX (DOcplex) and Gurobi (gurobipy);
- ability to develop and apply real-time decision-making methods (e.g. online heuristics, reinforcement learning approaches);
- good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure;
- excellent written and verbal communication skills including presentation skills and the ability to communicate effectively with a wide range of stakeholders;
- proven ability to manage competing demands effectively, responsibly and without close support;



- a proven ability to work well both individually and in a team;
- a strong commitment to your own continuous professional development.
- a track record of successful, high quality, publications in journals ranked 3 or 4 in the Chartered Association of Business Schools (CABS) Academic Journal Guide.
- commitment to working on campus for at least three days a week and engaging regularly with the SIREN project team

Additional information

Working at Leeds

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

Our University

As an international research-intensive university, we welcome students and staff from all walks of life. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education.

At Leeds University Business School we work hard to ensure that our shared University values (collaboration, compassion, inclusivity and integrity) guide all our activities. We are committed to developing our culture so that we are able to work together to deliver our purpose to “make an exceptional impact on the economy, society and the planet”. We aim to do this by pursuing our goals of developing innovative solutions for society and building a community of responsible leaders.

Everyone at the Business School has a part to play in realising this vision - whether you are involved in education, research, external engagement or professional support. Everyone has skills, knowledge, talent and experience of value - we all have something to offer and we all have a part to play in contributing to collective success. This is at the heart of who we are and how we treat one another. We want all colleagues to feel excited about going to work, to feel valued, to be challenged, to feel



part of something bigger and to have fun along the way. To make this a reality we expect all colleagues to champion our shared values, to help us to strengthen our culture and to contribute to our common purpose.

We are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian, people who belong to a minority ethnic community; people who identify as LGBT+; and disabled people. Candidates will always be selected based on merit and ability.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found under the 'Accessibility' heading on our [How to Apply](#) information page or by getting in touch by [emailing HR via hr@leeds.ac.uk](mailto:hr@leeds.ac.uk).

Criminal Record Information Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

Salary Requirements of the Skilled Worker Visa Route

G7 - Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information, please visit [the Government's Skilled Worker visa page](#).

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit [the Government's page, Apply for the Global Talent visa](#).

