



Job Description

Post Title	Research Fellow - 80780
Organisation Advertising Description	School of Computer Science in the College of Engineering and Physical Sciences
Salary	Full time starting salary is normally in the range £30,395 to £39,609. With potential progression once in post to £42,036 a year.
Duration of Post	Fixed-term for up to 24 months

Job Summary

The University of Birmingham (UoB) is an academic partner in the Alan Turing Institute (ATI), the UK's national institute for AI and data science. This position is associated with the UoB-ATI project "Topological Hierarchies in Complex Image Data" as part of a wider programme of activities at UoB on "Data Analytics and Computer Vision for Image Dataset on Many Scales" and the ATI's "Data Science for Science" programme.

Working within the School of Computer Science at UoB, the successful applicant will be contributing to the advancement of knowledge by developing new mathematical and computational approaches to understanding complex images. The proposed approach will combine the concept of a compositional model in computer vision with methods from computational topology to develop new ways to learn the underlying latent structure of an image in such a way that it reveals the intrinsic properties and structures of the objects in the image. The main application areas will be in the biological sciences, and the project will benefit from access to data from some of the most advanced imaging instruments available through the Centre of Membrane Proteins and Receptors (COMPARE) and other collaborations, including state-of-the-art super-resolution microscopy and advanced mass spectrometry imaging techniques. The project will also benefit from access to the UK's largest IBM PowerAI cluster at UoB, and Microsoft Azure cloud services through ATI.

Main Duties

- Develop research objectives and proposals for own or joint research, with assistance of a mentor if required
- Contribute to writing bids for research funding
- Analyse and interpret data
- Apply knowledge in a way which develops new intellectual understanding
- Disseminate research findings for publication, research seminars etc
- Supervise students on research related work and provide guidance to PhD students where appropriate to the discipline
- Contribute to developing new models, techniques and methods
- Undertake management/administration arising from research

- Contribute to Departmental/School research-related activities and research-related administration
- Contribute to enterprise, business development and/or public engagement activities of manifest benefit to the College and the University, often under supervision of a project leader
- Collect research data; this may be through a variety of research methods, such as scientific experimentation, literature reviews, and research interviews
- Present research outputs, including drafting academic publications or parts thereof, for example at seminars and as posters
- Provide guidance, as required, to support staff and any students who may be assisting with the research
- Deal with problems that may affect the achievement of research objectives and deadlines

Person Specification

- First degree in Computer Science, Mathematics, Physics or an equivalent numerate discipline **and** have completed (or be about to complete) a PhD in a related field.
- Strong background in programming (Python preferred)
- High level mathematical and analytical capabilities
- Ability to communicate complex information clearly
- Demonstrable skills in the development and application of computational and mathematical methodologies.
- Ability to assess resource requirements and use resources effectively
- Understanding of and ability to contribute to broader management/administration processes
- Contribute to the planning and organising of the research programme and/or specific research project
- Co-ordinate own work with others to avoid conflict or duplication of effort