



1 Advertisement

Post Title: Research Fellow in Machine Learning

School/department: School of Engineering and Informatics/Department of Informatics

Hours: Full-time or part-time hours considered up to a maximum of 1.0 FTE. Requests for [flexible working](#) options will be considered (subject to business need).

Location: Brighton Uk

Contract: Fixed Term. The position is provided for one year. Extensions are possible.

Reference: 20680

Salary: starting at £44,414 to £52,841 per annum pro rata if part-time.

Placed on: 13 June 2023

Closing date: 31 July 2023. Applications must be received by midnight of the closing date.

Expected interview date: To be confirmed.

Expected start date: To be confirmed.

Applications are invited for a Research Fellow in Machine Learning at the Predictive Analytics Lab (<https://wearepal.ai/>) in the Department of Informatics at the University of Sussex. The duration of the position is originally for one year with the possibility of an extension. **The position is part of the ERC funded project “Bayesian Models and Algorithms for Fairness and Transparency” ([BayesianGDPR](#))** – led by [Professor Novi Quadrianto](#).

It involves the development of novel inference and computational methods towards the realisation of fair and transparent machine learning systems in static and dynamic settings. In particular, the project will focus on Bayesian methods and their “deep” extension. The successful candidate will develop and apply a range of techniques in variational inference, generative models, and reinforcement learning.

The successful applicant should have a PhD in machine learning along with a good publication record in leading machine learning conferences (e.g. NeurIPS, ICML, ICLR). The salary offered will be appropriate to the qualifications, standing and experience of the successful candidate.

Informal enquiries are welcome and can be made to Professor Novi Quadrianto (N.Quadrianto@sussex.ac.uk).

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 requires that work undertaken for the University is performed from the UK.

The University of Sussex values the diversity of its staff and students and we welcome applicants from all backgrounds.

2. Working environment

Please find further information regarding the school/division at <https://www.sussex.ac.uk/informatics/>

The [PAL laboratory](#) at the Department of Informatics was co-founded by Novi Quadrianto and Jeremy Reffin in 2017. Members of the laboratory undertake high quality research and publish in top machine learning, computer vision, and artificial intelligence conferences/journals including NeurIPS, ICML, CVPR, ICCV/ECCV, AAAI, JMLR, and TPAMI. The laboratory also creates significant impact by providing support, technology, and highly-trained specialists to a new generation of technology companies. We also have satellite labs in [Spain \(Bilbao\)](#) and [Indonesia \(Jakarta\)](#).

The [city of Brighton & Hove](#) has everything - sun, sea, brilliant clubs, Premier League football club, great places to eat, fabulous shops, a truly cosmopolitan vibe and is located only 50min from central London. Located on the beach (only 30min by cycle from the University), Brighton boasts beautiful seaside views and beaches, boating, sports and beach activities. The South Downs provide breathtaking views, tranquil walks and plenty of opportunities for mountain biking, hiking or picnics.

CORE JOB DESCRIPTION

Job Title:	Research Fellow in Machine Learning
Grade:	Research Fellow II, Grade 8
School:	Engineering and Informatics
Location:	Falmer Campus, Brighton, UK
Responsible to:	Principal Investigator through to Head of School
Direct reports:	n/a
Key contacts:	Professor Novi Quadrianto (n.quadrianto@sussex.ac.uk).
Role description:	Research Fellow II is a career-grade research position. Post-holders will be expected to take a senior role within a research team, be able to demonstrate an established research portfolio, and a growing reputation

in their field of study. They will also be expected to provide support and guidance to less experienced members of staff.

PRINCIPAL ACCOUNTABILITIES

1. To engage in individual and/or collaborative research activity resulting in high-quality publications; and to contribute to obtaining research funding and knowledge exchange income as appropriate.
2. To contribute to School teaching activities.

KEY RESPONSIBILITIES

1. Research, Scholarship & Enterprise

- 1.1 Contribute to the development of School research strategy and themes.
- 1.2 Develop research objectives and proposals for own or joint research at acceptable levels.
- 1.3 Conduct research projects individually and/or in collaboration with others.
- 1.4 Assess, interpret and evaluate outcomes of research, and develop ideas for their application.
- 1.5 Produce high-quality research outputs that have impact in the field, for publication in monographs or recognised high-quality journals, or performance/exhibition, as appropriate, and contribute to the School's REF submission at acceptable levels of volume and academic excellence.
- 1.6 Lead small research projects and/or identified parts of a larger project, including supervising the work of others and managing or monitoring a research budget.
- 1.7 Make presentations at conferences, or exhibit work in other appropriate events of a similar standing and identify ways to disseminate research outputs informally via the internet, the media and other forms of public engagement.
- 1.8 Identify sources of funding and secure or contribute to the process of securing bids.
- 1.9 Identify and secure opportunities for enterprise activity, knowledge exchange income and/or consultancy where permissible.
- 1.10 Actively build internal and external contacts, and play a key role in internal networks and relevant external networks in order to, for example, identify sources of funding, secure student placements, and build relationships for future activities.
- 1.11 Contribute to a relevant national professional body or recognised events.
- 1.12 Continually update knowledge and understanding in field or specialism, and engage in continuous professional development.

1.13 Conduct risk assessments, and take responsibility for the health and safety of others, if required.

2. Teaching & Student Support

2.1 Contribute to teaching and learning in the School, including delivery of teaching if required.

2.2 Supervise postgraduate research students, for example as part of a postgraduate supervisory team.

2.3 Assist in the development of student research skills.

3. Contribution to School & University

3.1 Attend and contribute to relevant School and project meetings.

3.2 Mentor less experienced colleagues, supporting them in developing their research techniques, and advising on personal development.

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

4. Role-specific duties

4.1 Develop a machine learning framework for addressing fairness in classification problems and beyond, and under uncertainty about data, models, and predictions about future data (*fairness under uncertainty in a static setting*).

4.2 Extend the framework to a setting where data points arrive over time, and models have to be dynamically updated when taking general feedback (*fairness under uncertainty in a dynamic setting*).

4.3 Ensure a human could understand how non-discrimination is defined and achieved by using, among others, uncertainty estimates for building interpretable models and/or explicitly explaining about changes being made to the models to enforce non-discriminatory principles (*transparency in fairness*).

4.4 Produce open-source software tools to enable for the use of the wider scientific community.

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

- Regular published output of original research at international level (referred journal papers, monographs, book chapters, text-books).
- Other evidence of original research contribution to the field, such as through invited conference contributions, membership of editorial panels etc.
- Evidence of successful co-supervision of doctoral students.

- Evidence of the successful supervision of others within the research group.
- Evidence of contribution to the process of obtaining competitive/peer reviewed research support funding or collaboration in significant research projects with institutions of equivalent standing.
- Involvement in the creation, transfer and use of the results of research through a range of knowledge exchange activities.
- Success in transferring research results to commercial, professional, public sector or other practical use.
- Evidence of successful engagement in teaching or supervision.

PERSON SPECIFICATION

ESSENTIAL CRITERIA

1. Normally educated to doctoral level, or other equivalent qualification, or appropriate level of experience, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of significant independent contribution to the design and execution of research.
3. An emerging track record of publications in reputable journals and other appropriate media of similar standing.
4. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
5. Ability to work individually on own initiative and without close supervision, and as part of a team.
6. Ability to exercise a degree of innovation and creative problem-solving.
7. Excellent organisational and administrative skills.
8. Ability to prioritise and meet deadlines.
9. Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA

1. PhD in Computer Science, Mathematics or related field, or 3+ years of relevant industry experience
2. High proficiency in programming with languages such as Python, Rust.
3. A strong publication record in competitive peer-reviewed journals or conference proceedings.

4. Experience with variational inference, generative models, and reinforcement learning models.

DESIRABLE CRITERIA

1. Experience of generating research or knowledge exchange income.
2. Experience of supervising postgraduate research students.
3. Experience with architecting, scaling, securing and operating machine learning systems in the cloud at medium to large scale.