CANDIDATE BRIEF

KTP Associate – Data Scientist / Senior Data Scientist, Faculty of Engineering and Physical Sciences and Vet AI

Salary: £40,000 – £50,000 p.a. plus a training allowance of £4,667. This position is not on the University of Leeds salary scale.

Reference: CSRIS1173

Fixed-term for 28 months (due to external funding for a fixed period).

Based at the NEXUS building within the University of Leeds.

KTP Associate – Data Scientist/Senior Data Scientist, Faculty of Engineering and Physical Sciences and VET-AI Ltd

Do you have a background in Causal Inference, Advanced Statistics, Machine Learning or Bayesian Graph Models at PhD level? Are you an accomplished candidate with experience in advanced data analytics involving causal analysis? Do you want to work with a ground-breaking new company to develop a smart clinical reasoning tool using causal inference methods and AI?

We have an opportunity for you to 'fast track' your career into industry by leading a strategically important data science project through to a successful proof of principle, ready for implementation. Through a [Knowledge Transfer Partnership](#) (KTP), you will be working in partnership with [VET-AI Ltd.](#) and the School of Computing at one of the UK's leading research intensive universities, with the prospect to lead the successful initiative through implementation within the company following the KTP. This is an excellent opportunity to translate your academic achievements within industry.

VET-AI is a fast-growing, R&D company deploying cutting-edge machine learning and AI approaches to veterinary (vet) care. During 2019, the company won a string of prizes including [Tech Nation Rising Stars 2019](#) and featured in Gizmodo, Daily Mirror, The Times, and many others. VET- AI's strategic vision is to revolutionise the provision and access of vet services through digitisation, to improve animal health and welfare globally, and to positively impact the lives of vet professionals by enabling remote working.

The aim of this KTP is to develop and deploy a clinical reasoning tool through a smartphone app that can effectively diagnose skin conditions in cats and dogs. You will be managing the development to establish proof-of-principle of this innovative diagnostic tool, and setting out a roadmap for embedding this tool within the VET-AI app to realise full commercialisation. You will be expected to work with an academic team from the University of Leeds with specialist knowledge in the fields of Causal Inference Statistics, Machine Learning and AI, and VET-AI's clinical and business experts.

You will be based at the company premises in Nexus, University of Leeds, West Yorkshire and formally employed by the University of Leeds for the duration of the project (fixed period of 28 months). Remote working during the coronavirus pandemic may be necessary.

Vet-AI has a liberal working culture and is focused on long-term goals, not day-to-day management. The company takes its employees' wellbeing very seriously and even has a Chief Happiness Officer. You will have freedom to work in your own way, and you will only be measured by the project outcomes.

You will have access to a training and development package worth £4,667, to be spent according to your needs and the project's requirements, enabling you to work effectively on the KTP. Additionally, depending on restrictions related to Covid-19, you will attend two weeks residential KTP training (which may be delivered virtually during the coronavirus pandemic) to equip you with the skills and knowledge required to complete the project, for which time is allocated and funding provided.

Contingent on successful proof-of-principle within the KTP, full implementation and evaluation of the diagnostic tool will be within the commercial setting of VET-AI through follow-on employment within VET-AI.

What does the role entail?

As a KTP Associate – Data Scientist, your main duties will include:
- Familiarisation with the business and its goals, including working across disciplines (tech development team and veterinary clinical team);
- Auditing and verifying that data are sufficient in breadth and completeness for meaningful causal inference evaluation;
- Application and evaluation of probabilistic and counterfactual prediction tools and causal inference methods applied in high-dimensional complex domains;
- Design and inference on Bayesian Graphical models, entailing missing data;
- Implementation of deep learning models for computational image analysis;
- Development and proof-of principle evaluation of counterfactual prediction and causal inference capabilities;

- Design of clinical trials to assess the performance of counterfactual prediction and inference tools in comparison to human vets;
- Development of a roadmap strategy to bring the successful product to market and thorough evaluation of the product's capabilities;
- Formulation of a comprehensive final report detailing the follow-on embedding, trial evaluation and full commercialisation phases of the product.

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.

What will you bring to the role?

As a KTP Associate – Data Scientist, you will have
- A PhD or MSc in Mathematics, Statistics, Computer Science, or relevant Data Science domain, with demonstrable research experience in Statistics, Machine Learning or AI;
- An excellent track record of publications in top tier machine learning journals, and international conferences;
- Proficiency in programming languages, such as R, Python, numpy and pandas, Tensor Flow, and/or PyTorch;
- Experience with software version control within GitHub;
- The ability to efficiently evaluate, select and read academic journal articles;
- A confident approach with clear oral and visual presentation skills;
- A proactive manner with an adaptable mind-set;
- A willingness to learn and understand clinical aspects of veterinary sciences;
- An experimental and exploratory approach to finding solutions to complex problems.

You may also have:
- Experience of Causal Inference methodology, for either application or research;
- Experience with inference in Bayesian networks using message passing;
- Implementation skills using DL python libraries and modern CNN models;
- Familiarity with and demonstrable use of the causal inference software DAGitty online and R package dagitty;

- Familiarity with inference packages like PyAgrum, pomegranate or PyMC3;
- Experience of full software development lifecycle, including design, development, testing, deployment and maintenance;
- Experience of academic research in a quantitative discipline involving either Causal Inference or Deep Learning;
- Evidence of having delivered presentations to academic and/or business audiences.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

To explore the post further or for any queries you may have, please contact:

Professor Mark Gilthorpe (University of Leeds)
Tel: 0113 343 1913
Email: m.s.gilthorpe@leeds.ac.uk

Dr Adele Williams (Vet AI)
Tel: 07795515203
Email: adele.williams@vet-ai.com

Additional information

Find out more about the School of Computing

Find out more about our Research and associated facilities

Further information about Vet AI may be found at https://www.vet-ai.com/

Further information on KTPs can be found at http://ktp.innovateuk.org/

Interview location

Due to the current Government Coronavirus guidance and social distancing measures, the interviews for this role are likely to be conducted remotely using Microsoft Teams or Zoom. More information will follow should you be successful in gaining an interview.

Working as a KTP Associate at Leeds

You will be an employee of the University of Leeds and will have access to University facilities. However, you will be based for the majority of your time at the company premises, working to their terms. You will have access to the University's USS pension scheme, with generous employer contributions. You will also have access to the University's Organisational Development and Professional Learning (OD&PL) programme.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk. The post is located at the company premises. Candidates with disabilities wishing to review access to the building are invited to contact James Hartford (Research and Innovation Service), J.Hartford@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.