Candidate Information

Position: Senior Data Analyst
School/Department: Centre for Cancer Research and Cell Biology
Reference: 20/108236
Closing Date: Wednesday 8 July 2020
Salary: £41,526 to £51,034 per annum
Anticipated Interview Date: Tuesday 28 July 2020
Duration: This is a fixed term contract until 31 March 2022

JOB PURPOSE:

The post holder will lead in the development of innovative approaches to image analysis (including algorithm application and design, along with automated detection and grading of cancer from microscopic images) as part of the Tissue Hybridisation and Digital Pathology (TH & DP) section of the Precision Medicine Centre of Excellence (PMC). The role will require a high level of independent and creative effort in their approach to these problems, and to work closely with the Clinical Lead for TH & DP and supported by the Scientific lead for TH & DP.

MAJOR DUTIES:

1. Be responsible for leading in the design, development, and validation of new algorithms in the domain of Image Analysis for Computational Pathology.
2. Be responsible for the development of prototypes and Proofs of Concept of algorithms and workflows and the development of these algorithms and proofs of concept.
3. Lead in the analysis of data and produce reports regarding performance parameters of the algorithms in development.
4. Lead staff in the TH & DP section to ensure all work is carried out to the required standard and timescales.
5. Ensure up to date knowledge of the scientific and technological data in the field and provide appropriate supervision and training to data scientific staff in the team.
6. Contribute to valid records of laboratory and project activities, including validation reports, project reports and budget reports, and participate in corrective action as appropriate.
7. To remain current with developments in the rapidly changing field of digital image analysis and be able to advise on technology and software for future procurement exercises.
8. Support research and academic staff in the use of a range of instrumentation that will be used within the cellular biomarker research programme image analysis software packages across a wide variety of tissue biomarker analysis projects.
9. Support technical standardisation across collaborative partners by engaging with technical and scientific staff in other UK centres.
10. Liaise with senior technical staff and specialists in QUB and UK collaborative partners to ensure effective integration, standardisation and service support in digital pathology and provide advice to the Digital Pathology Group.
11. Develop knowledge and maintain an up-to-date understanding of the use of human tissue and digital pathology according to the Human Tissue Act 2004 and accreditation standards such as, CLIA, ISO18159(2012) and understand the ethical issues relating to digital pathology.
12. Ensure that the Digital Pathology Group comply with good clinical practice, good laboratory practice, ethical, governance and regulatory guidelines in the delivery of a busy digital pathology research programme.
13. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at conferences.
14. Assist the grant holder in the preparation of funding proposals and applications to external bodies.
15. Present regular progress reports to members of the research group or to external audiences to disseminate and publicise research findings.

16. Carry out occasional postgraduate supervision within the post holder's area of expertise and under the direct guidance of a member of academic staff.

Planning and Organising:
1. Prioritise own work on a day-to-day basis, supervise data scientific staff and liaise with colleagues to co-ordinate the service provision and research projects.
2. Plan with the Clinical lead and Scientific Lead to ensure the successful delivery of specific goals project.
3. Contribute to group planning.
4. Contribute to the writing of SOPs and regulatory compliance including overseeing visits from regulatory organisations.

Resource Management Responsibilities:
1. To be involved in the management, mentoring and training of junior technical staff and scientists using imaging resources.
2. Prioritise own work on a day-to-day basis and liaise with colleagues to co-ordinate the service provision and research projects.
3. Plan with the Clinical lead and Scientific Lead to ensure the successful delivery of specific goals project
4. Contribute to group planning.
5. Provide training and guidance to other clinical, academic and support staff who will use the fluorescent imaging and digital pathology facilities.

Internal and External Relationships:
1. Liaise on a regular basis with professionals, internal and external to the university.
2. Present ongoing activity and results regularly at departmental and laboratory meetings.
3. Work closely with the TH & DP Clinical & Scientific Leads to ensure consistency of approach.
4. Regular reporting to and communication with the TH & DP Clinical & Scientific Leads.
5. Regular liaison with other sections and teams, in particular the Bioinformatics team of the PMC, QUB, Genomics HPC and scientific computing.
6. Participate in and develop external networks, and build relationships with stakeholders and partners who contribute to the PMC.
7. Liaise on a regular basis with colleagues, students and research teams.
8. Build internal contacts and participate in internal networks for the exchange of information.
9. Attend external meetings and conferences to learn the latest techniques, present the activities of the PMCoE and share information and ideas.

ESSENTIAL CRITERIA:
1. Have a PhD in Machine Learning, Deep Learning, Image Analysis or related discipline.
2. Significant relevant experience in the development of algorithms for the analysis of large image data, or equivalent large data sets
3. Industry experience in developing diagnostic algorithms to industry-quality standards.
4. Experience in image processing tools and libraries e.g. the use of OpenCV, scikit-image, ImageJ.
5. Experience of Deep Learning frameworks e.g. pandas, scikit-learn, Keras, TensorFlow, PyTorch.
6. Experience in scripting and programming e.g. Bash, Python, Jupyter Notebook, Python, R, C/C++
7. IT skills and experience in using image databases e.g. HTML, CSS, JavaScript, PHP, MySQL.
8. Ability to lead a team of data scientists and to liaise with multi-professional and multi-disciplinary teams.
9. Good organisation skills.
10. Supervisory skills.
11. Excellent verbal and written communicating skills with experience in communicating project progress and results with proven peer-reviewed publication record commensurate with experience.
12. Ability to plan, organise and prioritise work and meet deadlines.
13. Team worker, highly motivated, supportive of colleagues within the group.
14. Ability to show initiative and work independently when required.
15. Ability to plan and allocate work and responsibilities using discretion to determine priorities and resolve conflicts to meet targets and deadlines.
16. Occasional work outside normal working hours.
17. Willing to travel occasionally within UK and Europe for purposes of training, collaborative meetings and conferences.

DESIRABLE CRITERIA:
1. Experience of working with Linux/UNIX environments.

2.   Experience managing, integrating and analysing different data sources.
3.   Proficiency with a modern high-level programming language.
4.   Experience creating, querying and maintaining databases, particularly MySQL or PostgreSQL.
5.   Working knowledge of developing software/algorithms in accordance with the requirements of IEC 62304.
6.   Experience of prototyping of algorithm solutions for use by external users.
7.   Experience of successfully contributing to research projects and attracting grant funding.
8.   Experience of mentoring and evaluating the work of others (formal line management experience not required, but should show significant evidence of informal mentorship).
9.   Working with multiple partners to deliver a national research programme.
10. Knowledge of histology.
11. Knowledge of the Human Tissue Act 2004 (HTA).
12. Knowledge of GCP.