Candidate Information

Position: Research Fellow in Data Analytics
School/Department: Centre for Public Health
Reference: 20/108381
Closing Date: Monday 19 October 2020
Salary: £33,797 - £39,152 per annum.
Anticipated Interview Date: Tuesday 3 November 2020.
Duration: Available until 30 September 2022

JOB PURPOSE:

To use data analytics techniques to analyse ophthalmic medical and genetic data which will be used for knowledge discovery purposes, e.g., to determine the best combination of factors related to age-related macular degeneration. The post is funded by the Macular Society. The successful candidate will work under the supervision of Dr. Ruth Hogg in the Centre for Public Health where they will assist in the analysis of NICOLA study ophthalmic data (https://www.qub.ac.uk/sites/NICOLA/), genetic data and research data generated by the Reading Centre (https://www.networcuk.com).

MAJOR DUTIES:

1. Conduct research under supervision within the research project.
2. Use data analytics techniques (bioinformatics, data mining, machine learning, statistics, etc.) to carry out analysis of ophthalmic medical data which includes parameters extracted from medical images, genomic, biochemistry, clinical and lifestyle data.
3. Use exploration techniques including, but not limited to, principal component analysis, correlation analysis, classification, sequence pattern analysis, anomaly detection, data visualization, etc.
4. Carry out bioinformatics, data engineering, analyses, and key visualizations using methodologies appropriate to the area of research, primarily using R.
5. Present regular progress reports on research to members of the research group and to external audiences to disseminate and publicise research findings.
6. Prepare, often in consultation with supervisor, material for publication in national and international conferences and/or journals and presentations at conferences.
7. Assist the grant holder in the preparation of funding proposals and applications to external bodies.
8. Liaise with the Macular Society to update members on the project progress.
9. Carry out routine administrative tasks associated with the research project to ensure that project is completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities, etc.
10. Carry out occasional undergraduate and postgraduate student supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
11. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:

1. Plan details of research programmes and carefully align them with the other relevant work packages involved in the project in order to achieve an effective and productive synergy.
2. Plan for the use of research resources in order to ensure that facilities are available at required times.
3. Plan own day-to day activity within framework of the agreed research programme, particularly in relation to the joint work with the collaborating partners.
4. Plan in advance to meet deadlines for internal/external progress reports, conference and journal publications.
5. Coordinate and liaise with other members of the project research group over work progress.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:
1. Liaise on a regular basis with colleagues, students and external partners including the Macular Society.
2. Establish professional and good working relationships with technical and other support staff as well as external project partners.
3. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
4. Join external networks at national and international levels to share information and ideas.

ESSENTIAL CRITERIA:
1. Have or about to receive a PhD in bioinformatics, genetics, statistics or other fields relevant to the technical areas of the post (Candidates about to receive their PhD should provide proof that their viva is scheduled within three months of the closing date).
2. 3 years relevant experience.
3. Experience in working with genetic data and/or bioinformatics.
4. Experience in conducting research in bioinformatics, data mining, machine learning or statistics and a publication record in line with stage of career in prestigious leading journals/conferences.
5. Experience in using/developing one or more of the following data analytics techniques: principal component analysis, correlation analysis, classification, anomaly detection, sequence pattern, visualization.
6. Ability to pre-process data using data engineering approaches such as data integration, to implement data mining algorithms, machine learning models or statistics techniques using some programming languages (e.g., C/C++, Java, Python, R, etc.).
7. Strong analytical and problem-solving skills.
8. Ability to communicate complex information clearly both verbally and written.
9. Ability to build contacts and participate in internal and external networks.
10. Demonstrable intellectual ability.
11. Ability and willingness to travel to attend meetings with partners and conferences.

DESIRABLE CRITERIA:
1. Experience in working with medical data.
2. Experience in working with image data.
3. Experience in managing a research project.
4. Experience in writing a funding proposal
5. Interest in learning data mining/machine learning techniques.
6. Advanced experience using R.
7. Strong commitment to a career in research.