

Division of Molecular Pathology

Postdoctoral Training Fellow – Image processing

Sutton, Greater London

We seek a highly motivated Postdoctoral Training Fellow to join the Yuan lab at The Institute of Cancer Research, London (ICR). The main focus of the Yuan lab is to develop novel computational approaches for studying cancer by fusing machine learning, digital pathology, and bioinformatics (www.yuanlab.org). We apply advanced deep learning and computer vision to study why cancer is so difficult to treat, by examining cancer evolution dynamics in the context of the tumour microenvironment. Our recent progress on AI, histology and cancer evolution was published in the journal of Nature Medicine (doi: 10.1038/s41591-020-0900-x).

This is a rewarding opportunity to participate in the Cancer Research UK funded Early Detection program, to define risk in smouldering myeloma for early detection of multiple myeloma. The aim is to develop better markers and therapies to predict, and ultimately prevent, progression from this pre-cancer status to incurable cancer.

We are looking for a highly motivated individual to join this project. You will lead the development of new deep learning systems for analysing digital pathological images of smouldering myeloma. You will enjoy the highly collaborative nature of this project, working with the internationally renowned team consisting of oncologists, pathologists, immunologists, bioinformaticians at UCL, Broad Institute, and Dana-Farber Cancer Institute to deliver leading-edge toolkits to identify the genomic, transcriptomic and immunological landscape of smouldering myeloma. You will be located in the vibrant centre of cancer research discovery and therapeutics at ICR London in the endeavour to cure cancer. You will learn about the latest biotechnologies, travel to conferences, and excel in coordinating between programming and biomedical research.

Applicants must hold a PhD in Computer Science, Systems Biology, Ecology, Statistics or Engineering. Good programming skills, preferably in R, Matlab, Python or C, and experience in computer vision, machine learning or statistics are essential. Experience in biomedical image processing and deep learning is desirable but not essential.

Appointment will be on a Fixed Term Contract for 3 years, with a starting salary in the range of £32,200 to £42,550 p.a. inclusive, depending on postdoctoral experience. Expected start date is 1 September 2020 with flexibility. The successful candidate will be based in Sutton, Greater London.

To apply, please complete an online application including the supporting statement, contact details of two referees, and upload your CV.

To apply please include the following to your application:

- A full CV with a publication List
- Research plan (one page outlining your current research interests and research plans for the next 3 years) – this can be uploaded in to the Supporting Statement section

DUTIES AND RESPONSIBILITIES

- To apply and develop new deep learning systems for analyzing pathological images
- To collaborate on statistical integration of genomics data with images
- To contribute to the publication of high quality research in the form of papers, patents, and presentations at meetings.
- To work independently on a defined project and as part of a team, and to consult when appropriate.
- To communicate effectively with other members of the team and collaborators, where necessary, ICR and outside organizations.
- Be familiar with ICR's approach towards risk management including its policies and procedures, which require all staff to play an active part in identifying and managing risk.

Any other duties which may be required which are consistent with the nature and grade of the post.

This job description is a reflection of the present position and is subject to review and alteration in detail **and emphasis in the light of future changes or development.**

APPOINTMENT DETAILS

ICR has a workforce agreement stating that the maximum length of employment for Postdoctoral Training Fellows should be no more than 7 years within ICR and no more than 10 years total postdoctoral employment (at ICR and elsewhere). Consequently, you should be aware that the length of contract offered will be limited by this agreement as well as the availability of funding.

PERSON SPECIFICATION

Post: Postdoctoral Training Fellow

| Criteria | Essential or Desirable? |
|--|-------------------------|
| Education & Knowledge | |
| PhD in computer science, engineering, Systems Biology, Engineering, Ecology or Statistics or related subjects* | E |
| Knowledge in medicine or biology | D |
| Excellent publication record | E |
| Experience | |
| Machine learning | E |
| Demonstrable experience in programming in Python, R, Matlab, C or equivalent languages | E |
| Demonstrable experience in computer vision, deep learning or statistics | D |
| Working with medical or histology images | D |
| Working in collaborative research | D |
| Skills | |
| Good interpersonal skills and the ability to interact effectively with collaborators | E |
| Demonstrated ability to interpret and present results | E |
| Proven excellent written communication skills | E |
| Proven ability to plan, organise & prioritise a busy workload to meet milestones within specific timelines | E |

| General | |
|---|---|
| Highly self-motivated with scientific curiosity and a keen desire to produce high quality scientific data | E |
| Committed to learning histological approaches | E |

**** as a minimum requirement candidates must have submitted their thesis by the start date of their employment and been awarded their PhD within the six month probationary period.***