



Division of Molecular Pathology

Postdoctoral Training Fellow – Machine learning

Sutton, Surrey

We seek a 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 new computational approaches for studying cancer by fusing computer vision, machine learning and bioinformatics (www.yuanlab.org). Different from traditional cancer-centric approaches, we study tumours from a novel perspective: as evolving ecosystems. Aided by advanced machine learning and computer vision, we study why cancer is so difficult to treat – by understanding not only cancer cells but also normal cells around them.

Through an extensive training in this position, we aim to enable you to apply your computer vision and machine learning skills to study lung cancer evolution. We expect you to lead the development of new deep learning systems for analysing digital pathological images and integrating image data with genomics. This is a rare and rewarding opportunity to participate in a prospective, pioneering study of lung cancers and collaborate with world-leading teams on the TRACERx program. We expect this exciting project to enable the discovery of new biomarkers and clinical innovations to change the way we treat lung cancer.

The Yuan lab at ICR specialises in the development of machine learning and statistical approaches for the analysis of histopathological images and the integration of images with genomics (www.yuanlab.org). This is a rare and rewarding opportunity to participate in a prospective, pioneering study of lung cancers using cutting edge biotechnologies, and collaborate with world-leading teams on the TRACERx program. You will lead the development of new deep learning systems for The successful post holder will develop exciting new computational pipelines for analysing digital pathological images and integrating image data with genomics.

You will also join a highly motivated team of computer scientists and bioinformaticians with diverse expertise, working closely with clinicians in the vibrant centre of cancer research discovery and therapeutics at ICR London in the endeavour to cure cancer. You will enjoy the highly collaborative nature of this project, 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.

Appointment will be on a Fixed Term Contract until 31st December 2022, with a starting salary in the range of £32,200* to £40,100 p.a. inclusive, depending on postdoctoral experience. The successful candidate will be based in Sutton, Surrey.

*starting salary for applicants who submitted the thesis, and are awaiting PhD award

To apply, please complete an application form online via our website <http://www.icr.ac.uk/jobsearch>

To apply please include the following to your application:

- A full CV with a publication List
- Supporting statement and the names and contact details of two referees
- Research plan (one to two pages outlining your current research interests and research plans for the next 3 years)

DUTIES AND RESPONSIBILITIES

- To apply and develop new deep learning systems for analyzing histology images
- To drive or collaborate on statistical integration of omics 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.

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	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	E
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.***