Postdoctoral positions in Machine learning, Computational and RNA biology

Multiple postdoctoral fellowship positions are immediately available in the laboratory of Dr. Sarath Janga (http://www.iupui.edu/~jangalab/) at the Department of Biohealth Informatics, Indiana University (IUPUI). The research in the Janga laboratory is focused on A) developing integrated experimental and computational approaches for high-throughput mapping of protein-RNA interaction maps across cell types, to elucidate tissue-wide post-transcriptional regulatory networks controlled by RNA-binding proteins, B) using single molecule sequencing approaches for mapping RNA modifications and structures and C) Developing technology for real time sequencing on the nanopore platform for clinical sequencing and diagnostics.

Interested candidates should send a copy of the CV + three references to scjanga@iupui.edu. Salary is negotiable based on experience.

Position 1

Postdoctoral fellow

Machine learning in genomics

Successful candidate will develop and apply algorithms for the analysis of large-scale multi-omics datasets both public and inhouse generated datasets. This will be a unique opportunity to lead computational analysis of new types of data in the nascent field of protein-RNA interactions, single molecule sequencing and RNA epigenetics.

Expertise and interest in current developments in RNA processing and function, RNA binding proteins, RNA epigenetics, small RNAs and Ribonucleoproteins will be highly beneficial. This position seeks candidates with strong informatics background and deep expertise in developing advanced statistical and machine learning tools for large-scale data analysis, modeling and simulation of RNA biology and gene expression datasets. Experience in working with machine learning packages such as Scikit learn and deep learning packages such as Tensorflow, Keras or Pytorch is required and knowledge in working with high-throughput sequencing datasets such as CLIP-Seq, RNA-Seq, Ribo-Seq is a plus.

The successful applicant must have a record of productivity and creativity with an interest to collaborate in a multi-disciplinary setting.

Requirements:

- Strong programming skills
• Expertise in mathematics, computer science, statistics, engineering, machine learning, signal processing, computational genomics, or a related field
• Strong publication record and communication skills
• Ability to work closely with experimental biologists

Position 2

Postdoctoral fellow

Computational genomics and software development

Successful candidate will analyze single molecule RNA and DNA sequencing data and develop software using inhouse generated microbial and/or mammalian datasets. The candidate will have the opportunity to develop clinically relevant diagnostic solutions for real time detection of microbial infections in wound samples. This will be a unique opportunity to lead technology development project and its potential commercialization by working closely with an interdisciplinary group of clinicians and bench biologists.

Expertise and interest in current developments in nanopore sequencing and genomics in general will be highly beneficial. This position seeks candidates with strong informatics background and deep expertise in data mining, algorithm implementation and software development on genomic sequencing datasets. In particular, experience and knowledge in working and deploying bioinformatics tools for high-throughput sequencing and assembly of genomes would be a plus. The successful applicant must have a record of productivity and creativity with a strong interest to collaborate in a multi-disciplinary setting. Doctoral degree is a significant plus but is not required for this position. Hence, individuals with industry experience, and those interested in transitioning into biomedical science from other careers are encouraged to apply.

Requirements:

• Strong software development skills on unix systems and ability to develop cloud-based applications
• Expertise in computational genomics, data mining and algorithmic implementation
• Strong communication skills
• Ability to work closely with clinical and experimental biologists

Position 3

Postdoctoral fellow

Experimental RNA biology
Successful candidates will have extensive experience in RNA biochemistry and application of high-throughput techniques for studying protein-RNA interactions on a transcriptome-wide scale. This will be a unique opportunity to lead the development of integrated experimental and computational methods in a highly interdisciplinary group, for high-throughput mapping of protein-RNA interactions. Candidate should be familiar with using techniques such as CRISPR genome editing and CLIP-sequencing, while knowledge of single molecule sequencing is a plus.

We are looking for motivated individuals interested in developing novel methods for mapping protein-RNA interactions using a combination of phase separation and crosslinking protocols. Applicants should have a PhD in biological sciences, molecular/cell biology, genetics or related fields. The candidate should be self-motivated and have a proven track record of productivity. Experience in RNA biology, epigenetic techniques, CRISPR and/or other gene editing techniques, and analyzing genomic data sets will be an advantage. Candidates with a PhD in RNA biology and epigenetics would be given preference; however, candidates with 1 to 2 years of post-doctoral experience in other areas of molecular biology but with a strong interest in novel assay development in RNA therapeutics, would also be considered. The candidate should possess excellent written and verbal communication skills, as well as ability to work collaboratively.