Postdoc position at Institut Curie in Systems Biology Group

Machine learning applications and methods development for single cell molecular data in cancer biology

Duration: 18-36 months with possibility of extension, starting immediately

Links http://curie.fr, http://u900.curie.fr http://sysbio.curie.fr, https://prairie-institute.fr/

Context

Institut Curie is one of the biggest European institutions for cancer research with strong and old interdisciplinary traditions. It also comprises a hospital specialized in cancer treatment, and therefore dispose of a continuum of expertise from fundamental research to patient care. It is located in the centre of Paris in a both cultural and scientific rich environment (http://curie.fr).

The "Bioinformatics and Computational Systems Biology of Cancer" Unit (U900 INSERM, Mines ParisTech, Institut Curie) involves about 90 researchers and students. It is a very active and growing interdisciplinary team of biologists, physicians, mathematicians, statisticians, physicists and computer scientists (http://u900.curie.fr).

Our research group Computational Systems Biology of Cancer focuses on deciphering determinants of tumorigenesis and tumor progression and proposing new strategies to combat cancer. The domains of expertise are big data analysis; signaling network construction and mathematical modeling; study of synthetic interactions in cancer mechanisms, drug response prediction, patient stratification and many others (http://sysbio.curie.fr). The group has strong expertise in application of machine learning and artificial intelligence methods to cancer omics data, with two members being chairs of Paris of Artificial Intelligence Research Institute (https://prairie-institute.fr/). The group has also long term experience in implementing scientific methodology of data and biological network analysis into user-friendly software packages, currently used by other researchers world-wide (the list of developed software can be found at http://sysbio.curie.fr/software).

Job description and skills

We expect a candidate with a strong background in statistics, machine learning, computational systems biology or physics. The successful candidate should have experience in high-throughput data analysis in biology. Experience of working with large single cell datasets and/or developing original methods for analysis of this kind of data will be an advantage.

Ideally, the candidate should be able to demonstrate some knowledge of basic biological mechanisms involved in cancer and have experience of collaboration with biologists for solving concrete biological problems. He/she will have to understand the biological and clinical questions related to cell fate decision, tumor heterogeneity, interaction with microenvironment, drug response. In order to answer this questions, the candidate will be involved in analysis of large scale single cell data and contributing to development the state-of-the-art computational methodology in this field.

The candidate must have a good knowledge in multidimensional data analysis in biology, and be proficient in high-level languages like Python, R, Java or MATLAB. Familiarity and experience with existing systems biology methods and software would represent a strong advantage.

Excellent communication skills and team spirit, and a capacity to work in autonomy are essential.
Fluent English both spoken and written is required.

Degree: **PhD level in computer science, bioinformatics or systems biology**

Send CV, motivation letter, and contacts details of 2-3 references to recrutement.u900-sysbio@curie.fr and indicate as subject the reference SB20A-SC