



## **Seeking postdoctoral research fellows to join the Genomic Data Science lab at the National University of Singapore**

The Genomic Data Science Lab ([www.boxiangliulab.com](http://www.boxiangliulab.com)) combines QTL, single-cell, and spatial transcriptomic approaches to unravel the molecular mechanisms of polygenic diseases. We are recruiting **one computational postdoctoral research fellow** and **one wetlab postdoctoral research fellow** to lead the following projects:

1. **Single-cell multi-omic quantitative trait loci:** We seek to identify cell-type-specific regulation of molecular traits using single-cell multi-omic measurements from multiple tissues (e.g. blood, adipose, kidney, liver). Our group works on autoimmune, cardiovascular, and metabolic diseases (e.g. T2D). Our group has access to several unique multi-ethnic cohorts with sample sizes ranging from hundreds to thousands of donors. Our lab is part of the Asian Immune Diversity Atlas (AIDA), Genotype-Tissue Expression project (GTEx), and Human Cell Atlas (HCA).
2. **Genetics of type-2 diabetes (T2D):** Individuals of Asian descent have a higher susceptibility to T2D. In particular, Singapore has the highest incidence of T2D among developed countries. We seek to identify the genetic drivers of T2D using a combination of genomic, transcriptomic, proteomic, and metabolomic datasets in a multi-ethnic pan-Asian cohort with thousands of participants.
3. **Machine learning for single-cell and spatial transcriptomics:** Our group applies deep learning and Bayesian models to tasks such as cell segmentation and 3D reconstruction of sparse spatial transcriptomic datasets. Our group is especially interested in spatial barcoding technology with subcellular resolution and has active collaborations with leading spatial transcriptomic technology providers.

In this role, you will be able to lead one or several projects, have the opportunity to mentor PhD and MS students, and present your results in leading conferences.

### **Qualifications (Computational)**

- PhD degree in Genomics, Biology, Bioinformatics, Computational Biology, Statistics/Biostat, Computer Science, Electrical Engineering, or equivalent experience.
- One or more first-author papers
- Experience with Unix, R, and Python
- Experience with genomics (RNA-seq, ATAC-seq, QTL, and etc)
- Experience with high-performance or cloud computing
- Basic knowledge in statistics and machine learning

### **Qualifications (Wetlab)**

- PhD degree in molecular biology, biochemistry, cell biology, a related field, or equivalent experience.

- Extensive experience in molecular biology (having done mouse work is a plus) as demonstrated by a first author publication in a relevant scientific journal.
- Excellent communication and teamwork skills.
- The ability to work independently to design and troubleshoot experiments.

**What we offer:**

- Large-scale single-cell multi-omic datasets for several tissues.
- Access to cutting-edge HPC compute cluster and GPU servers.
- Access to state-of-the-art sequencing equipment and core facilities.
- Flexible work schedule and hybrid / work-from-home opportunities
- Weekly one-on-one meeting and personalized mentorship
- Competitive salary with relocation fees provided.

If you are interested in joining our lab, please email [boxiangliu@nus.edu.sg](mailto:boxiangliu@nus.edu.sg) with the following information:

1. Curriculum Vitae.
2. Contact information for 3 references.
3. A cover letter to describe your current and future research interest.