Sijia Cui
Bioinformatics Project Scientist
Cedars Sinai Medical Center
cuisijia@gmail.com (832) 433-2050 Los Angeles, California
06/03/2024

Dear Hiring Manager,

I am excited to apply for the Computational Scientist position at Genentech. I am confident in my ability to contribute to your therapeutic discovery efforts and computational method development within the Autoimmune Disease Area Team. My background in bioinformatics, combined with my passion for advancing scientific research, makes me an excellent fit for this role.

During my tenure as a Bioinformatics Project Scientist at Cedars Sinai Medical Center, I led groundbreaking studies in spatial single-cell analysis for Inflammatory Bowel Disease (IBD), significantly advancing our understanding of its underlying mechanisms. I developed a Transformer-based model to analyze CyToF blood sample data, markedly improving diagnostic accuracy for IBD patient cohorts. My experience with single-cell RNA sequencing (scRNA-seq) and multi-omics integration has provided me with a comprehensive understanding of cellular heterogeneity and function, which is crucial for studying autoimmune diseases such as multiple sclerosis, systemic lupus erythematosus (SLE), systemic sclerosis (SSc), and type 1 diabetes.

I have a strong background in utilizing public data for data mining, independently designing algorithms, and integrating deep learning and machine learning techniques to address biological problems. For example, I applied a modified Variational Autoencoder (VAE) model for label transfer using publicly available single-cell data on IBD, combined with bulk RNA-seq datasets to identify key cell subpopulations and important genes associated with various IBD phenotypes. This innovative approach demonstrates my ability to develop and apply complex models to biological data, which aligns with the requirements of this position.

My technical skills include advanced proficiency in Python and R, as well as practical experience with Pytorch and Tensorflow. I am well-versed in performance optimization, version control systems, containerization, and continuous integration/delivery. My ability to analyze high-throughput genomic, transcriptomic, and proteomic datasets, combined with my interest in applying novel approaches to explore and integrate such data at scale, will enable me to make significant contributions to your team.

In addition to my technical skills, I have a strong publication record, including first-author papers in high-impact journals such as Nature Communication and Cell Research. My research has focused on tracking the evolution of cancer under dynamic immune selection and dissecting the single-cell architecture of late-relapsed hepatocellular carcinoma. These publications reflect my ability to conduct high-quality research and effectively communicate complex scientific results to a diverse audience.

I am particularly drawn to Genentech's commitment to innovation and its collaborative research environment. I am eager to work closely with an interdisciplinary team of research scientists and bench colleagues in the Immunology & Regenerative Medicine department. The opportunity to access pre-clinical and clinical samples, state-of-the-art technologies, and pioneering research aligns perfectly with my career aspirations.

I am excited about the possibility of contributing to Genentech's mission of creating a healthier future through innovative science. Thank you for considering my application. I look forward to the opportunity to discuss how my expertise and experience can benefit your team.

Sincerely,

Sijia Cui