Postdoctoral Position in Infectious Disease Bioinformatics and Machine Learning

Description of the research
Pathogenic microbial organisms cause a significant burden of disease, particularly due to the problem of drug resistance, whereby a pathogen no longer responds to treatment by one or more available drugs. The availability of fast, reliable and affordable whole-genome sequencing (WGS) methods has the potential to be a major boon for public health authorities attempting to control the development of drug resistance and the spread of epidemic outbreaks.

However, in order to fully harness the power of these methods there is an urgent need for novel machine learning and algorithmic techniques for microbial WGS data. Machine learning (in particular, deep learning) provides a tool to predict and understand the relationship between drug resistance and genotype.

The successful applicant will develop and apply deep learning methods for this task. The project will involve developing new neural network strategies and architectures and applying these methods to improve understanding and treatment of drug resistance in bacterial pathogens.

The candidate
The ideal candidate will have a PhD in computational biology, computer science, statistics, applied mathematics, or a related field. The candidate should be a self-starter, able to work independently and assist in supervising MSc or PhD students. Experience working with genomic data, and a knowledge of machine learning, including deep learning, is an asset. The candidate must have strong written and verbal skills in English. The candidate will be based at Simon Fraser University’s School of Computing Science, with possibility of a secondary appointment at the British Columbia Centre for Disease Control (BC CDC).

The offer
The position will be jointly supervised by Leonid Chindelevitch and Maxwell Libbrecht (Simon Fraser University, School of Computing Science) and funded by a Bioinformatics/Computational Biology grant from Genome Canada.

For more about our research groups see:
www.sfu.ca/~leonid/
www.cs.sfu.ca/~maxwl/

The position comes with extremely competitive postdoctoral-level compensation for two years, with possibility of extension by a year. Applications will be considered on a rolling basis starting immediately. Please send a CV, a cover letter, and two relevant peer-reviewed publications to leonid@sfu.ca and maxwl@sfu.ca, with “Postdoctoral fellowship - DR/ML” in the subject line.