



CENTER FOR BIOINFORMATICS & COMPUTATIONAL BIOLOGY



BIOINFORMATICS SEMINAR

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University of Delaware

INTRODUCTION TO NETWORK INFERENCE, WITH APPLICATIONS IN CANCER RESEARCH

Gene regulatory networks are responsible for much of the complexity of cellular life, and their malfunction can be catastrophic for an organism. So, understanding these networks has long been a goal of systems biology. It is often impractical to experimentally check every pair of genes for a regulatory interaction, but relatively easy to collect static gene expression data from many samples using methods such as RNA-Seq. Given this expression data, we can use a variety of computational techniques to predict the structure of the underlying regulatory network based on statistical relationships between the gene expression levels. This challenge, called network inference, is not only interesting from a theoretical standpoint, but also important for gaining insight into medical issues, such as the mechanisms of drug resistance in cancer.

BIOGRAPHY

Mike is originally from Pennsylvania. He got his undergraduate degree in Economics from New York University, and is now pursuing a PhD in Bioinformatics Data Science at University of Delaware, working in Abhyudai Singh's lab. His research is about modeling cellular heterogeneity, at both the gene network and cell population levels. Aside from his research, he is also a reservist in the Coast Guard, and enjoys playing guitar and reading about history.

CBCB SEMINAR

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3:30 PM

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