Data Science Seminar

Hosted by Department of Mathematical Sciences

- Date: Tuesday, Oct 27, 2020
- Time: 12:00pm – 1:00pm
- Room: Via Zoom
- Speaker: Yuan Luo (Northwestern University)
- Title: A Multidimensional Precision Medicine Approach Identifies an Autism Subtype Characterized by Dyslipidemia

Abstract

The promise of precision medicine lies in data diversity. More than the sheer size of biomedical data, it is the layering of multiple data modalities, offering complementary perspectives, that is thought to enable the identification of patient subgroups with shared pathophysiology. In our recent Nature Medicine paper, we use autism to test this notion and use state-of-the-art AI algorithms–graph clustering–to aggregate functionally related genetic mutations, and to find novel mechanisms of autism. By combining healthcare claims, electronic health records, familial whole-exome sequences, and neurodevelopmental gene expression patterns, we identified a subgroup of patients with dyslipidemia-associated autism.