Department of Physics and Astronomy Colloquium Series

Speaker: Juan Felipe Carrasquilla

Institution: University of Toronto

Title: Language models for many-body physics

Abstract:

In this talk, I will discuss our work on using models inspired by natural language processing in the realm of many-body physics. Specifically, I will demonstrate their utility in reconstructing quantum states and simulating the real-time dynamics of closed and open quantum systems. Finally, I will show the efficacy of using these models for combinatorial optimization, yielding solutions of exceptional accuracy compared to traditional simulated and simulated quantum annealing methods.

Here is a short bio:

Juan's research interests are at the intersection of condensed matter physics, quantum computing, and machine learning. He completed his Ph.D. in Physics at the International School for Advanced Studies in Italy (SISSA) and since 2017 he has been a researcher at the Vector Institute.