

Mathematics Department Colloquium Talk

Dr. Mark Hughes



On Thursday, April 27th at 1:00 pm- 2:00 pm at N-700

All students are welcome. Pizza will be served!!!

The talk is on

A three-pronged approach to using machine learning in topology

With recent breakthroughs in AI like Chat-GPT and DALL-E 2 making headlines, it's natural to ask what role machine learning will play in various technical fields. In this talk I will outline three broad modes through which machine learning can be applied to the field of pure mathematics. The main examples I will use come from the fields of knot theory and low-dimensional topology, though I will also include examples from other fields of pure mathematics where applicable. These applications will range from approaches that have already been successfully implemented to more speculative works-in-progress.

Dr. Mark Hughes is a mathematician who works in the field of low-dimensional topology, studying manifolds in 3 and 4 dimensions along with knotted loops and surfaces within them. In recent years he has become interested in mixing classical techniques of low-dimensional topology with emerging tools from machine learning to study computationally difficult problems in knot theory. He is originally from Alberta Canada, but has been a faculty member at Brigham Young University since 2014. He has 4 kids, and enjoys cycling and hiking when his kids will agree to go with him.