ACADIA UNIVERSITY

Mathematics and Statistics

GRADUATE STUDENT PERSENTATIONS

DECEMBER 1, 2022
HSH 019
3:30PM-4:30PM

SPEAKER: PAIGE GIBBON

A NOBEL JOURNEY THROUGH ENTANGLEMENT

ABSTRACT: John Clauser, Alain Aspect and Anton Zeilinger were this year's laureates for the Nobel Prize in Physics. Follow the questions which inspired their experimental journey and discover the distances they have gone in the quest to understand quantum entanglement.

SPEAKER: WILL SUTHERLAND

THE COMPARISION OF SIMULARITY AND DISTANCE MEASURES FOR TIME SERIES ANALYSIS

ABSTRACT: Time series data is ubiquitous in the present day and becoming even more prevalent as we increase our data collection abilities. A common problem we are then faced with is, "are these two time series similar?" This question appears in virtually every field of science and can be exemplified by questions like "does my Apple watch accurately measure my heart rate?" or "can the air quality monitor I bought correctly count the pollutants in my house?". In this presentation we will cover a few of the similarity and distance measures that can be employed to help answer these questions. These measures will range from the simple Euclidean Distance to a dynamic programming method called the Derivative Dynamic Time Warping to Kendall's Tau.

SPEAKER: DARRELL ASHLEY

DERIVATION OF THE NAVIER-STOKES EQUATIONS

ABSTRACT: When studying the loading of a ship's propeller the analysis of the fluid structure interaction is commonly accomplished through numerical methods known as Computational Fluid Dynamics (CFD). One such method uses Reynolds Averaged Navier-Stokes (RANS) equation solvers, which are capable of modelling turbulent flow. Here we will make a derivation of the Navier-Stokes equations, which are second order non-linear partial differential equations describing a viscous fluid flow

SPEAKER: LEO CROMWELL

UNCOUNTABILITY: A STEP BEYOND INFINITY

ABSTRACT: In this presentation we highlight relationships about infinite sets by investigating properties of the natural numbers. We conclude by presenting Cantor's groundbreaking argument, which established for the first time in history, that the set of all real numbers is uncountable.