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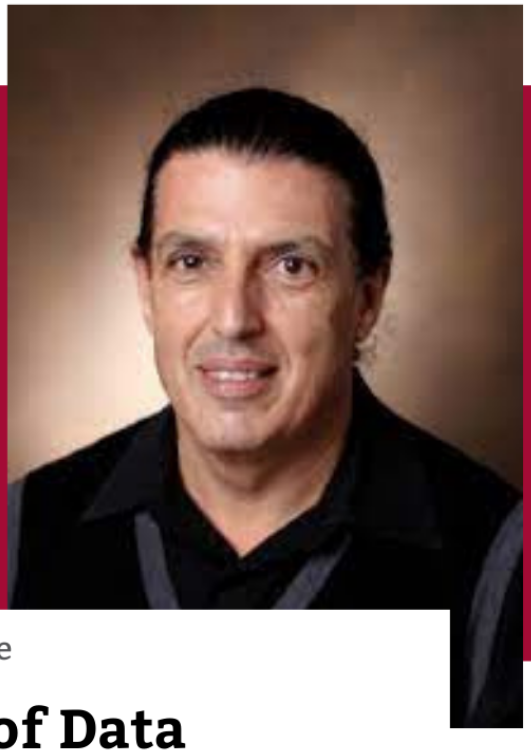

MATH 4513 Capstone

The Mathematics of Data

Featuring: Dr. Akram Aldroubi

530pm March 22, 2022
Physical Sciences Center, Room 201
Open to the public

Transport transforms for data analysis and machine learning

Transforms are mathematical machines that reorganize data, signals, or images in new configurations that allow a better understanding and manipulation of the data. For example, to store an image on a computer, the image is first sampled on a grid and then transformed into a set of binary numbers (zeros and ones) that are then stored on a chip. There are many types of transforms, so they can be selected based on the type of data and what one wants to do with it.

Recently, new transforms have been developed that are based on optimal transport theory. These transforms are well-suited for many applications and have outperformed state-of-the-art methods. In this talk, we will present several applications including cell morphology in drug discovery, nuclear structure in cancer, and MRI for knee cartilage in the prognosis of osteoarthritis.

Dr. Akram Aldroubi

Dr. Aldroubi is a Professor of Mathematics at Vanderbilt University. He is on the editorial boards of several mathematical publications, including the Journal of Fourier Analysis and Optimization.

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