



COLLOQUIUM

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**An operator learning framework for an inverse problem in
Electrical Impedance Tomography**

Friday Mar. 22 at 2:30pm in RT 1402

Bio: Anuj Abhishek got his Ph.D. in mathematics at Tufts University. After his Ph.D., he had post-doctoral positions at Drexel University (PA) and UNC Charlotte (NC). Currently, he is an Assistant Professor in the Department of Mathematics, Applied Mathematics and Statistics at Case Western Reserve University. Anuj's main research interest is in inverse problems, which is concerned with the determination of object parameters based on boundary measurements. Such problems appear quite naturally in applications such as, Medical Imaging, Seismic Imaging, and Non-destructive Material Testing.

Abstract: Neural network architectures have been shown to be fairly useful in approximating an operator between two function spaces. In this talk, we will briefly review an inverse problem that arises in Electrical Impedance tomography as well as review such operator learning network architectures. We will then see how we might use similar network architectures to learn (or, approximate) a map that takes in as its input the Dirichlet to Neumann operator and outputs the corresponding conductivity function. This is based on an ongoing work with my collaborator, Thilo Strauss (Xi'an Jiaotong-Liverpool University).

Refreshments will be served in RT 1517 at 2:10pm