

# ***ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR***

**Speaker: Hang Huan**  
**Texas A&M University**



**Date:** Tuesday, November 2, 2021

**Time:** 2:30 PM

**Location:** Zoom

**Zoom URL:** [notredame.zoom.us/j/97739336655?  
pwd=QmUxd3V2Rndyd0VFNlc0RFBxK0xPQT09](https://notredame.zoom.us/j/97739336655?pwd=QmUxd3V2Rndyd0VFNlc0RFBxK0xPQT09)

**Lecture Title:**

**Tensor Ranks and Matrix Multiplication Complexity**

**Abstract**

Tensors are multi-dimensional arrays. Notions of ranks and border rank abound in the literature. Tensor decompositions also have a lot of application in data analysis, physics, and other areas of science. I will try to give a colloquium-style talk surveying my recent two results about tensor ranks and their application to matrix multiplication complexity. I will also briefly discuss the newest technique we used to achieve our results: border apolarity. This talk assumes no background in geometry or algebra.