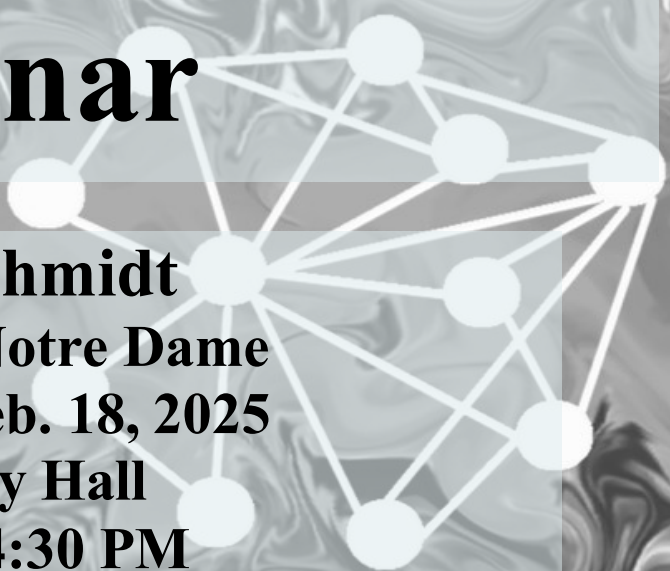


ACMS Grad & Postdoc Seminar



Emma Schmidt
University of Notre Dame
Wednesday, Feb. 18, 2025
154 Hurley Hall
3:30 PM – 4:30 PM

Numerical Algebraic Geometry and Kinematics

Algebraic geometry is the study of the structure of solution sets of polynomial equations. Two important questions in this field involve computing the number of connected components of a solution set as well as computing the real solutions to some polynomial system with real coefficients. With the help of routing functions, homotopies, and gradient descent, we can study the structure of these solutions and the “cells” or components that they form. Studying the monodromy of these solutions can give further insight into how systems behave around singularities specifically. Applications will be given in robotics and kinematics, analyzing how solutions to various robotic mechanisms interact with each other.

The Department of Applied and Computational
Mathematics and Statistics

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