TITLE: Visualization of Algebraic Structures
ADVISOR: Camelia Karimianpour

This project aims to investigate methods for visualizing algebraic structures. Algebraic concepts have inspired visual and decorative arts throughout history, appearing in tiling, design, textile and architecture. In this project, we seek to develop innovative techniques for visually representing modern algebraic structures. Specifically, we will study finite groups and their actions, as well as linear groups and their representations, and explore various mediums for their visualization. Students interested in this project should have a strong foundation in linear algebra (e.g., MAT224 or equivalent), familiarity with abstract algebra (e.g., MAT301 or equivalent), proficiency in programming (preferably in Python), and a passion for interdisciplinary work.