

# SPIRE-EIT 2023

Summer Program for Interdisciplinary Research and Education – Emerging Interface Technologies

**Project:** 3D biometrics scanning

**Short Title:** 3D scanning

**Faculty Mentors:** Beiwen Li, Associate Professor in Mechanical Engineering

**Graduate student mentors:** Micah Mundy ([mmundy@iastate.edu](mailto:mmundy@iastate.edu))

**REU Interns :** Amy Gilhoi, Rebekah Young, Tim Yu

**Description:** Dr. Beiwen Li's 3D optical sensing laboratory has developed a high-speed precision 3D scanning system that can capture the 3D surface geometry in micrometer scale within a few seconds. We are interested in testing its accuracy and effectiveness as a novel 3D scanner for biometrics information such as fingerprints. Students will be responsible for: (1) learning to conduct microscale 3D scanning of fingerprints; (2) testing its accuracy by comparing with 3D scanning results from conventional optical scanners; (3) using the 3D scanning result to build 3D solid models for 3D printing. At the end of project, a conference paper will be prepared and submitted to 2024 SPIE Defense and Commercial Sensing Conference.

