FACULTY MENTOR
Zhaowei Liu

PROJECT TITLE
Super Resolution Sound/Ultrasound Imaging

PROJECT DESCRIPTION
Description: The project is to build a sound/ultrasound based imaging device with improved imaging resolution. The student will use computer to collect a series of signals from a sound/ultrasound transducer and then reconstruct a final image using a specific numerical algorithm.
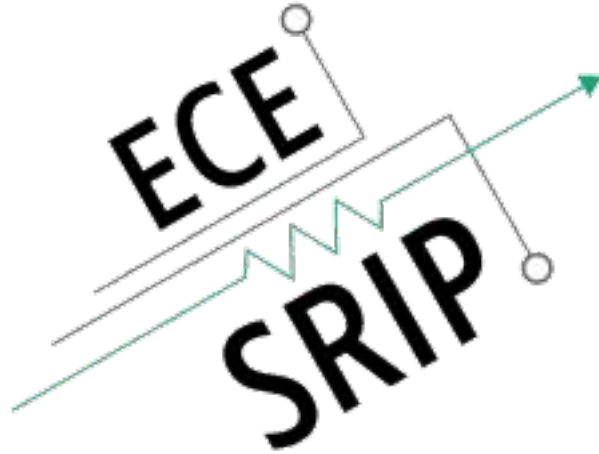
This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Good hands-on experience
2. Basic programing experience, know how to use Matlab or equivalent coding language
3. Imaging processing basics

FACULTY MENTOR
Zhaowei Liu

PROJECT TITLE
Computational Spectrometry

PROJECT DESCRIPTION
Description: The project is to perform a concept proof experiment for a computational spectrometer. The image of an incident light beam will be captured by a digital camera after a designed optical mask (already have one). By know the optical responses of the mask, the spectrum of the incident light will be retrieved through a neural network.

This project can accommodate both remote and in-person students.

INTERNS NEEDED
3 Students

PREREQUISITES
The student should know at least one of the following fields well:

1. deep learning neural network

2. computation imaging

3. optics and spectrometry

4. coding experience by using Matlab or others