

FACULTY MENTOR

Baghdadchi, Saharnaz

PROJECT TITLE

Singular imaging in turbulence

PROJECT DESCRIPTION

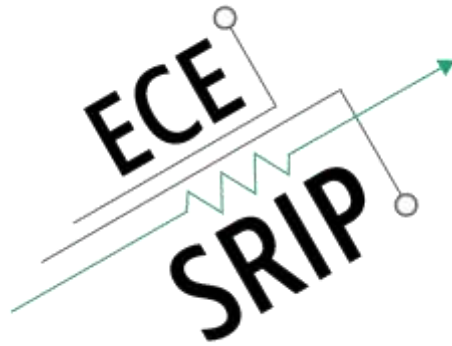
Scattering of photons inside inhomogeneous media is one of the major limiting factors in imaging biological tissues. Our imaging setup takes advantage of a novel set of spatially encoded projection patterns to generate an image of the objects hidden behind scattering materials. The choice of projection patterns has shown to reduce the number of required measurements to reconstruct an image of the hidden objects. We aim to further study different designs of incident light patterns and the effect of these new designs on the number of required projection patterns.

INTERNS NEEDED

1 MS student and 2 BS student

PREREQUISITES

We are looking for candidates who are interested in optics. Some experience with Labview is preferred.



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PROJECT TITLE

Endoscopic Reflectance Spectroscopy

PROJECT DESCRIPTION

This project involves adding reflectance spectroscopy capability to a fiber-based endoscopic imaging device. The current setup has the ability of computationally reconstructing 3D images from the captured 2D endoscopic pictures from the head and neck cancerous lesions. The reflectance spectroscopy could provide new information about the margins of the lesions, to be utilized in improving the accuracy of the 3D rendered images. The spectroscopic data could also be used to quantify the effect of treatment on these lesions.

INTERNS NEEDED

1 MS student or 1 BS student

PREREQUISITES

Experience with Labview, and Matlab or Mathematica is preferred.