

Department of Electrical and Computer Engineering
Application form for ECE 496/499 --- Senior Research Project and Thesis

Return to Room 2120 ECEB, Office of ECE Undergraduate Advising

Name: Stephen Zhu

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Course: ECE 496

Section/Semester: FALL 2022

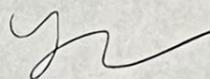
Title: Process Development for Soft Robot Fabrication and Control

Abstract: Soft robots are robots built with compliant materials. In practice, this has several advantages over traditional robotics, namely in terms of adaptability, safety, and cost. Professor Yang Zhang, who was at UIUC but recently moved to the University of Michigan, research group has developed an open-source finite element platform for the modeling of soft robots. This platform, Kraken, is being used to model the contact mechanics, statics, and dynamics of soft robots. Recording high-quality experimental results with more complex soft robots are required to further assess and improve the performance of Kraken. Currently, the soft robots available to Professor Zhang's group are limited to planar motion or operate only in highly controlled environments, with one end of the robot being fixed. My role in this project will be to help design and fabricate novel soft robot designs that can operate in 3 dimensions and are capable of large-scale locomotion. I will spend the first semester designing the soft actuators and control circuitry and the second semester assembling various configurations of the system and developing feedback controllers.

This project involves the design and construction or testing of electronic devices or hardware¹. ☒

Approved by: Yang Zhang

Instructor's Name



Instructor's Signature

Departmental Approval:

Erhan Kudeki

¹ If not, and the box is unchecked, then EE majors must complete a Special Circuits Project in the ECE 445 lab

--- see go.illinois.edu/ece496-499 about to how to sign up for the Special Circuits Project.

ECE 396, 397, 496, 499, ME 497 courses previously taken include:

Course No	Hours	Instructor	Subject Covered

The guidelines for ECE 496/499 can be found at go.illinois.edu/ece496-499. All students taking ECE 496/499 must complete all requirements described in the guidelines link. Please sign here to signify that you understand the requirements.

I have read and understood the requirements for ECE 496/499.



07/09/2022

Signature of student

Date