

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: 02/25/2022

PROJECT TITLE: Machine Learning for Neuroimaging DataGowtham Atluri
atlurigm@ucmail.uc.edu**Project Description**

The Adolescent Brain Cognitive Development (ABCD) Study is the largest long-term study of brain development and child health in the United States. The National Institutes of Health (NIH) funded this research that enrolled 11,878 children ages 9-10. The study collected different neuroimaging datasets such as fMRI, DTI, and Morphometrics from these children. Discovering insights pertaining to the connection between brain imaging data and the behavior is a major goal of this study. In our lab, we are interested in developing and applying machine learning techniques to data collected in the ABCD study to be able to explain the connections between neuroimaging features and the behavioral metrics. Motivated students who are well-versed in python or Matlab with some exposure to data mining or machine learning would be suited for this project. Prior exposure to machine learning is not mandatory. Students working on this project will learn about relevant machine learning approaches, write code to study their performance in the context of ABCD data, generate visualizations and prepare presentations of their findings.