CS 59200-NPS Neurosymbolic Program Synthesis

Professor Roopsha Samanta

Summary:
This is a course on advanced program synthesis, with a special emphasis on recent approaches that combine symbolic reasoning with deep learning. The first half of the course will begin with a brief review of symbolic techniques for program synthesis and primarily focus on reading, presenting, and critiquing recent papers and surveys. The second half of the course will focus on a course project and guest lectures. For the course project, students will build their own neurosymbolic program synthesizer and share their work with the rest of the class through a short writeup and talk.

Grading:
40% Project
40% Paper Presentations
20% Class Participation

Prerequisites:
Students are expected to have taken CS560: Reasoning About Programs, or equivalent. While a background in deep learning is not necessary, it will certainly be helpful. Exceptions may be made for students with strong backgrounds in deep learning with limited exposure to formal methods and programming languages.