Course Title
CS 59000CPR - Computer-aided Prog Reasoning

Instructor
Roopsha Samanta

Course Description

As software increasingly runs our lives, can we effectively reason about and ensure software reliability? In this seminar, we will focus on logical foundations and algorithmic techniques for guaranteeing that programs meet certain properties. At the end of the seminar, students will have an insight into the following questions:
- How can one specify program correctness?
- How can one check if a program is correct?
- How can one automatically synthesize a correct program or program component?

Course webpage:

The seminar explores a series of topics in automated program reasoning through readings of relevant book chapters and papers. Some of the topics will be presented as lectures by the instructor. Most topics, though, will be tackled through student-led, active learning sessions. In each such class, the lead student will present a 30-minute summary of the assigned paper(s), followed by a classroom discussion. To prepare for the discussion, each student must read the assigned paper(s) and submit brief reviews prior to class.

The course will be graded based on a course project (40%), paper presentations (30%), paper reviews (15%) and participation (15%).