CSCE/Biol 6810
Advanced Topics in Computational Life Sciences
Topic: Machine Learning in Biology

Course Information & Syllabus (Fall 2019)

Instructor: Rajeev K. Azad
Lectures/Seminar: Monday, 6:30 – 9:20 PM at GAB 438
Office Hours: Friday, 8:00 – 9:30 AM at LSC B314 or by appointment
Phone: 940-369-5078; 940-565-4694
E-mail: Rajeev.Azad@unt.edu

Required Textbook: There will be no required textbook. The course will be based on published journal and conference articles.

Course Objective: This course focuses on state-of-the-art as well as emerging machine learning methodologies and their applications in biology and medicine. The primary objective is to (re)-visit the concepts and approaches sought to address the machine learning problems in biological and biomedical sciences. This will encompass the frequently used machine learning methods in the area of computational and systems biology. Both unsupervised and supervised learning methods will be covered. Students will learn the basic as well as advanced mathematical and computational models underlying machine learning methods in biology and explore their use in current research. To achieve this goal, students will read and present research papers that describe the development and use of machine learning techniques in biology and medicine. These papers will form the basis for investigative research projects using the methodologies presented in these papers to address novel problems.

Assessment is primarily based on paper presentations (45%), project work and written reports (30%), and class participation—attendance and discussions (25%).

Attendance: Attendance is essential and thus is expected.

Americans with Disabilities Act: We cooperate with the Office of Disability Accommodation to make reasonable accommodations for qualified students (cf. Americans with Disabilities Act and Section 504, Rehabilitation Act) with disabilities. If you have not registered with ODA, we encourage you to do so. If you have a disability for which you require accommodation please discuss your needs with the instructor or submit a written Accommodation Request on or before the fourth class day.