CS 4720: Internet Programming

3 Credit Hours

Prerequisite: CS 3305 and (CS 3410 or CSE 3153)

This course introduces current technologies for modeling, designing, implementing, and developing Web applications. Topics include developing for the server and the client, programming frameworks, server administration and integration with databases. Practice will involve platforms and language such as Linux, Python, PHP, Ruby and JavaScript.

CS 4722: Computer Graphics and Multimedia

3 Credit Hours

Prerequisite: CS 3305

The basic principles and practices of interactive computer graphics and multimedia systems are covered in this introductory course. The design and implementation of state-of-the-art computer graphic rendering and visual multimedia systems are the main part of the course. The sub-topics of the course deal with specific input/output hardware devices and their technology, software and hardware standards, programming methods for implementing 3-dimensional graphical applications and interactive multimedia applications, and a study and evaluation of the effectiveness of graphic/multimedia communications. A large component of the class is the building of a large-scale application.

CS 4732: Machine Vision

3 Credit Hours

Prerequisite: CS 3642

This course introduces concepts and techniques in machine vision. Students successfully completing this course will be able to apply a variety of image processing techniques for the design and analysis of efficient algorithms for real-world applications, such as optical character recognition, face detection and recognition, motion estimation, human tracking, and gesture recognition. Topics include basic image enhancement, corner and edge detection, image morphology, linear and non-linear filters, image transformations, camera models, two-dimensional and three-dimensional image geometry, clustering and segmentation (and classification), object recognition and Bag-of-Words models, image texture, shape analysis, and tracking.