Course Description

Introduction to algorithms, mathematical tools, and various digital image applications. Gray level and multispectral image manipulation will be discussed. Students will work in teams to solve a significant image processing problem.

Learning Outcomes

By the end of the course you will

- Be familiar with 2-D/3-D signals, sampling and filtering
- Be familiar with sensor modality and digital encoding
- Be able to filter and enhance images in the spatial domain and frequency domain
- Be able to perform image restoration
- Be able to perform region and edge segmentation
- Be able to design algorithms for object recognition

Course Requirements

Attendance: Attendance is not mandatory. However, lectures, videos, and class discussions will contain vital information needed to do well on exams.


Grading:

Projects 25%
Exams I and II 20% each
Homework 10%
Final 25%
A: 90-100; B: 80-89; C: 70-79; D: 60-69; F < 60

Prerequisites: Probability theory, Calculus, Data structures, Proficiency with C/C++, Java, or Matlab.

Disabilities Accommodation:

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.