

CSCE 4240 Digital Image Processing

Instructor Dr. Yuan
Class hours 12:30 – 1:50PM, Tuesday and Thursday
Classroom NTDP B190
Office Hours 2:00PM – 3:00PM, Tuesday and Thursday or by appointment, room: NTDP F277
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Description

Digital image processing involves changing the nature of an image in order to improve its pictorial information for human interpretation or render it for autonomous machine perception. The subject is cross-disciplinary and has many applications including medical diagnosis, surveillance, remote sensing, space exploration, practical solutions of digital image/video perception, etc.

Outcomes

1. Demonstrated understanding of the basic concepts of image acquisition, sampling, and quantization.
2. Demonstrated understanding of the color spaces and color transformation.
3. Demonstrated understanding of spatial and frequency filtering techniques.
4. Demonstrated understanding of the fundamental image enhancement algorithms such as histogram modification and edge detection.
5. Develop writing and presentation skills to communicate digital image processing related topics.

Textbook

Digital Image Processing
Rafael C. Gonzalez, Richard E. Woods, and Steven L. Eddins,
Prentice Hall, 2003, ISBN 9870131687288

Supplement: opencv online document at <http://docs.opencv.org/>

Grading

Assignments	40 pts
Projects	40 pts
Exams	20 pts

Assignments There will be four assignments. The total point for each assignment is 10. The due date is on **Friday 11:59PM** of the week marked in the schedule.

Assignments must be done individually, but discussions among students are encouraged. Any late submission is not accepted except the student is in one of the following cases. In case of sickness, accident that prevents the student from completing or turning in the work, or any foreseeable delay, discussion with the instructor is required for the consideration of accepting the late submission. A written note, e.g., from the doctor, that states the incident is mandatory to receive any credits for the late submission.

Projects A project is assigned to each group of two (or three) students and the total points for a project is 40. The project is due on **4/23 at 12:30PM**. Each team must turn in a package of source code, a one-page description of the program, and a project presentation.

Presentations The project presentation is part of the project and takes 10 points out of the 40 for the project.

Exam Exam takes 20 points. The date of the exam can be found in the schedule.

Absenteeism Policy

Attendance is required of all students. Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, in the first week of the class. For other reasons, students must provide substantial documented evidence for skipping classes.

Collaboration and Cheating

Collaboration among students is strongly encouraged. You may discuss the meaning or intent of an assignment with other students. But you **must not** share code or any implementation. All work which you turn in must be completely done by yourself.

Cheating will not be tolerated. Students guilty of cheating on a test or program can result in a mark of zero for the test or program or an F in the course. Allowing others to copy your work is also considered cheating. For further details and clarifications regarding collaboration and cheating, view the university Student Rights and Responsibilities (<https://deanofstudents.unt.edu/conduct>) web page.

Course Evaluation

At the end of the semester you will be asked to participate in two evaluations of the course and the instructor. In addition to the department exit survey, UNT offers The Student Evaluation of Teaching Effectiveness (SETE). This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work continually to improve my teaching. Your participation is appreciated.

ADA

UNT complies with all federal and state laws and regulations regarding discrimination including the Americans with Disability Act of 1990 (ADA). If you have a disability, it is your responsibility to obtain verifying information from the Office of Disability Accommodation (ODA) and to inform me of your need for an accommodation. Requests for accommodation must be given to me no later than the first week of classes for students registered with the ODA as of the beginning of the current semester. If you register with the ODA after the first week of classes, your accommodation requests will be considered after this deadline.