

CSC 391/691
Introduction to Computer Vision, Fall 2016

Section A: M W F 10:00 - 10:50am Man 226

Instructors

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Course

Course website:

<http://www.cs.wfu.edu/~pauca/CSC391-CV.html>

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Textbook:

Computer Vision: Algorithms and Applications, by Szeliski (required)

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Schedule: A detailed schedule can be found in the course webpage and will be maintained regularly throughout the semester.

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Grading:

Programming projects	40%
Final project	20%
Midterm	15%
Final exam	20%
Attendance	5%

The course midterm and final grade are determined using a seven point scale

- A range - Demonstrated mastery of course subjects
- B range - Demonstrated advanced understanding of course subjects
- C range - Demonstrated basic understanding of course subjects
- D range - Demonstrated minimal understanding of course subjects
- F - Failure

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Attendance: Regular attendance and class participation is expected. You are required to come to class regularly, ask and answer questions, and participate in class discussion. A student with more than 6 unexcused absences will lose all 5% of the grade allocated for this rubric.

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Programming Projects: There are weekly programming assignments for hands-on exploration of computer vision algorithms. You will install and use the OpenCV library and use it via Python code. Previous knowledge of Python is not required.

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Midterm and final exam: A midterm test and a final exam are schedule for the course. The tests will be based both on lecture notes posted by the instructors as well as on material from the programming assignments.

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Final Project: A final project will be assigned towards the end of the semester. The final project gives you the opportunity to explore a computer vision for robotics applications. Individual and team work will be allowed but more will be expected of group projects.

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Academic Integrity: You are encouraged to discuss assignments with other students, but programs and written reports must be done *individually*, except for pre-specified group projects. Copying of partial or complete work will not be tolerated and will be referred to the University Judicial System.

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Topics Covered:

- Basic pixel-based operations like adding, subtracting, thresholding, blending
- Geometric and morphological transformations
- Spatial and frequency filtering
- Image pyramids
- Edge, point, and corner detection
- Local image features
- Feature matching and the Hough transform
- The SIFT and FAST algorithms
- Face detection and recognition

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Learning Assistance: If you have a disability that may require an accommodation for taking this course, please let me know and also please contact the Learning Assistance Center (758-5929) within the first two weeks of the semester.

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Course Plan in the Event of Closure of the University: In the event that the University closes due to pandemic or other disaster, the course will be continued through the internet or by postal mail, if the former is not available. Professor Pauca will distribute class notes, weekly lab material, and homework through the

course webpage (www.cs.wfu.edu/~pauca/CCC391-CV.html) or by postal mail in the case of internet service failure. Class notes will contain extensive lecture material as well as short exercises designed to test the students comprehension of the material. Office hours will be held through the internet using either Sakai or Webex. Students will be required to turn in assignments electronically using Sakai or by postal mail. Examinations will be distributed by internet, email, or postal mail, as needed. Return date and time for examinations will be clearly specified. In addition Professor Pauca will be accessible by email through any of the following addresses: paucavp@wfu.edu and paulpauca@gmail.com.