Course Overview

Juan Carlos Niebles and Ranjay Krishna
Stanford Vision and Learning Lab
Today's agenda

• Introduction to computer vision
• Course overview
Contacting instructor and TAs

• Instructors:
  – Juan Carlos Niebles
  – Ranjay Krishna

• Teaching Assistants
  – Sasha Harrison
  – Max Voisin
  – Brent Yi
Office hours

• **Juan Carlos Niebles:**
  – By appointment

• **Ranjay Krishna:**
  – By appointment

• **Sasha Harrison:**
  – Mondays 1pm–3pm, Thursday 10am–12pm

• **Max Voisin:**
  – Wednesday 5pm – 8pm

• **Brent Yi:**
  – Tuesday 4pm–7pm
Class times

Lectures
• Tuesdays and Thursdays
  1:30pm to 2:50pm
  @Building 370–370.

Recitations
• Fridays
  12:30 to 1:20pm
  @ Shriram 104
Contacting instructor and TAs

• All announcements, Q&A in Piazza
  – All course related posts should be public.

• All private correspondences to course staff should post private (instructors only) post on piazza.
  – Use this for personal problems and not for course related material.
Overall philosophy

Breadth
- Computer vision is a huge field
- It can impact every aspect of life and society
- It will drive the next information and AI revolution
- Pixels are everywhere in our lives and cyber space
- CS131 is meant as an broad overview course, we will not cover all topics of CV
- Lectures are mixture of detailed techniques and high level ideas
- Speak our “language”

Depth
- Computer vision is a highly technical field, i.e. know your math!
- Master bread-and-butter techniques: face recognition, corners, lines, features, optical flows, clustering and segmentation
- Programming assignments: be a good coder AND a good writer
- Theoretical problem sets: know your math!
- Final Exam: your chance to shine!
Syllabus

Official website
http://cs131.stanford.edu

If the website does not automatically redirect you, you can also find the webpage here:
http://vision.stanford.edu/teaching/cs131_fall1920/index.html
Grading policy – homeworks

- Homework 0 (Basics): 8%
- Homework 1 (Filters – Instagram): 9%
- Homework 2 (Edges – smart car lane detection): 9%
- Homework 3 (Panorama – image stitching): 9%
- Homework 4 (Resizing – seams carving): 9%
- Homework 5 (Segmentation – clustering): 9%
- Homework 6 (Recognition – classification): 9%
- Homework 7 (Face detection – Snapchat): 9%
- Homework 8 (Tracking – Optical flow): 9%

All homeworks due on Fridays at midnight
Grading policy

• Final Exam: 20%

• Up to Extra Credit: 10%
Grading policy – homeworks

• Most assignments will have an extra credit worth 1% of your total grade.

• Late policy
  • 7 free late days – use them in your ways
  • Maximum of 3 late days per assignment
  • Afterwards, 25% off per day late
  • Not accepted after 3 late days per assignment

• Collaboration policy
  • Read the student code book, understand what is ‘collaboration’ and what is ‘academic infraction’
Submitting homeworks

• **Homeworks** will consist of python files with code and ipython notebooks.

• **Ipython notebooks:**
  – Will guide you through the assignments.
  – Might contain written questions
  – Once you are done, convert the ipython notebook into a pdf and submit on Gradescope ([https://www.gradescope.com/courses/24953](https://www.gradescope.com/courses/24953)).
    • Access code: 95DZD3

• **Python files:**
  – All code must be submitted to Gradescope as well.
  – Check our course website for details on submissions.

• **HW0 and HW1** is live, you can start working on it immediately. We will try and get all the assignments out to you as soon as they are ready.
Final exams

• Will contain written questions from the concept covered in class or any questions in the homeworks.

• Can require you to solve technical math problems.

• Will contain a lot of multiple choice and true–false questions. We will release a practice final towards the end of the quarter.
Class notes

• The fall 2017 version of the class has notes available:
  – https://github.com/StanfordVL/CS131_notes
• You can earn up to 3% extra credit by adding new materials from this year’s version of the class that is missing.
• The assignment of extra credit will range from 1% for small additions to 3% for significant additions/improvements to the notes.
• This can boost your grade by half a letter grade.
Why should you take the class?

• Become a vision researcher
  – CVPR 2019 conference
  – ICCV 2019 conference

• Become a vision engineer in industry
  – Perception team at Google AI
  – Vision at Google Cloud
  – Vision at Facebook AI

• General interest
## CS 131 Roadmap

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From Convolutions to Convolutions
Welcome to CS131

Let's have a fun quarter!