

# Lecture 1

## Advances in Computer Vision

Lecture TR 1pm - 2:30pm, room 26-100

<http://6.8300.csail.mit.edu/sp23/>



**6.8300/6.8301 Advances in Computer Vision**  
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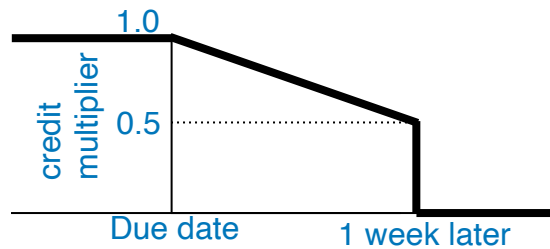
# Undergraduate and Graduate versions of this class share the same lectures.

- Undergraduate version, 6.8301, 15 units:
  - Satisfies MIT's CI-M requirement (Communication Intensive, within the Major).
  - WRAP (Writing, Rhetoric, And Professional communication) staff will offer ~8 recitations and provide coaching on communication aspects of the class. .
  - Their assessments and your participation in the required CI-M recitations will be 10% of your final grade. Please fill-out [this Google doc](#) to help schedule the sections.
  - Non-MIT students taking the undergraduate class must still fulfill (and thus benefit from) the CI-M components of the class.
  - Summary: More in-class time than graduate version: about 8 required recitations—coaching related to communication elements of the class. Sometimes shorter problem sets and shorter final project.
- Graduate version, 6.8300, 12 units:
  - Problem sets will usually have one or two problems for the graduate students only (or for extra credit for undergraduates).
  - Final projects will be longer and graded to a higher standard than undergraduate version final projects.
  - We're sorry, but the CI-M recitations and instruction are only available to those enrolled in 6.8301. (But the MIT Writing and Communication Center, not part of this class, is available to all MIT students: <http://cmsw.mit.edu/writing-and-communication-center>)
  - Summary: Somewhat longer problem sets and final project than the undergraduate version, no recitations.

# Grading

- Problem sets (60%)
- Final Project (40%)
- for 6.8301 students, 10% of course grade will come from classes CI-M components, including required recitations. That will be folded into your final project grade (thus, 1/4 of the final project grade).
- No exams or quizzes

# Problem sets



- Problem sets will be posted usually weekly, usually due one week later. See course web page, <http://6.8300.csail.mit.edu/sp23/>, for the schedule.
- Grades returned two weeks after due date.
- Late penalty: submission deadline is 23:59 on the due date. Late submissions accepted up to one week after deadline, but grade decays linearly down to 1/2 credit over that time (then 0 credit).
- Important-reason grace allowance for late submissions: 3 days, for any important reason. No need to clear it with us, but there's no "saving" it—must be used with any extension. Any request beyond that allowance requires S<sup>3</sup> approval (MIT's student support services).
- Only electronic problem set submissions will be accepted, no hard copies.
- Collaboration policy:
  - You can talk with each other, get advice, and ask questions on Piazza, but **the writing and coding must be done individually and never shared.**

# Final Project

- We will provide a list of projects to pick from, or you can propose your own. Can work in pairs, or individually.
- You'll write a final project proposal, and (for 6.8301) a revision of that proposal.
- Every person gives a short presentation of their project during the final week, and submits their written final project.

# Additional Information

- For office hours, see course website, <http://6.8300.csail.mit.edu/sp23/>.
  - [Use TA office hours](#): for psets questions.
  - [Use faculty office hours](#): for questions about lectures or projects.
- Piazza: to ask questions of other students and TA's, use Piazza.
- Textbook: we will post relevant chapters from forthcoming MIT Press computer vision textbook. Other resources are listed on course web page, many of which are free and online.

# Course content

- We will cover: Cameras, optics, signals, deep learning, applications, and practical research issues.
- See course web page for schedule/syllabus:  
<http://6.8300.csail.mit.edu/sp23/>
- Math: Linear algebra, geometry, multivariate calculus, optimization, probabilistic inference, machine learning , deep nets.
- Coding: Python, PyTorch
  - [Tutorials in Python and Pytorch](#) will be announced and offered before the assignments that first use them.

# Other questions:

We'll be in the lobby just outside 26-100 after this class for any immediate questions today.

Other mechanisms to answer general questions about the class:

piazza

TA's or faculty members during their office hours

course web page: <http://6.8300.csail.mit.edu/sp23/>