The Era of Big Data!

Example: Image Classification

- **Data**: Training data containing cat and grass.
- **Model**: Describe the raw data using statistical models.
- **Algorithm**: Perform learning, inference and prediction.
- **Computing**: Store and execute the tasks.
Statistics

The science of making sense of data!
... Using fancy tools like neural nets, boosting, and support vector machines without understanding basic statistics is like doing brain surgery before knowing how to use a band-aid...

Larry Wasserman, “All of Statistics”
An introductory course in probability and statistics.

Chapters in Course Note:
- Mathematics review (ch.1)
- Basic probability (ch.2)
- Discrete random variables (ch.3)
- Continuous random variables (ch.4)
- Joint distributions (ch.5)
- Large sample limits (ch.6)
- Estimation (ch.7)
- Random processes (ch.8)
- Random processes through linear systems (ch.9)
Teaching Staff

**Instructor**: Prof Stanley Chan; MSEE 338
Office Hour: Email Appointment

**TA**: Yue Han; EE 208 / 209
Office Hour: Tue 10am-12, Thu 3am-5pm

**Project Assistants**: (For projects only)
Yiheng Chi, EE 343, chi14@purdue.edu
Zhiyuan Mao, EE 343, mao114@purdue.edu
Office Hour: By Appointment
Every two weeks. Check website for date.
Due at 4:30pm. MSEE 330 dropbox
Staple your homework. Otherwise ZERO
First homework is up. Due next Friday.
Watch homework videos on the course website.
Do homework. If no/little effort in homework, your grade will be F.
Project 20%

- Two Python projects
- Real applications of ECE 302
- We will not teach them in class
- You have to learn by yourselves
- Require basic programming skills
- Project assistants are available for help
Exam

- 2 mid terms (15% each); 1 final (40%)
- Closed book, closed note
- No electronics, of any kind
- Formula sheet will be given
- Exam dates are listed in the syllabus
- Evening exams
- We will cancel two lectures
- No make up exam
- DO NOT TRAVEL BEFORE FINAL EXAM
Grades

Curved.

Typical grades:

- A: > 85
- B: 75 – 84
- C: 60 – 74
- D: 50 – 59
- F: < 50
Past Comments from Students

- “… the first day of class he said this is going to be the hardest class you’ve taken and he was not kidding …”

- “… avoid Stanley Chan …”

- “… thoroughly depressing and miserable is a better description for this class …”
Office Hour Policy

- Your First Contact: Teaching Assistant
- Project / Programming: Project Assistants
- Things the above cannot help: Prof Chan

- Do NOT bring homework to my office / TA’s office and work there, even if it is office hour and no other students are here.
Office Hour Policy

Q: “I don’t understand topic ABC, can you explain it once more?”
A: Yes, certainly.

Q: “I have absolutely no idea about how to solve Problem X.”
A: Please watch video first.

Q: “I have some thoughts but the answer is different from my friends. Can you help me?”
A: Definitely.

Q: “I missed a class last week. Can you repeat the lecture for me?”
A: NO!

Q: “Will topic XYZ be covered in exam?”
A: Check course website.
Cell Phone Policy

No Cell Phone at ANY time.
Course Material Copyrights

- All course materials are for ECE 302 students only.
- Prof Chan owns the copyright, not you.
- You are legally NOT allowed to upload any ECE 302 material to commercial websites, e.g., course hero.
I respect you as adults

Do NOT copy and paste (or any variation)

Do NOT cheat in exams

Do NOT steal someone’s idea

I have ZERO tolerance against plagiarism

If you got caught for plagiarism, you will
  - Get F in the course
  - Be sent to Office of Student Rights and Responsibilities (OSRR)
  - Worst case: Be kicked out from Purdue

If you collaborate with a friend on projects, state it clearly on your reports.
Questions?