Lecture 0: Introduction

Yi, Yung (이융)

EE210: Probability and Introductory Random Processes
KAIST EE

MONTH DAY, 2021

Outline

- Course logistics
- Why necessary to take the course of probability and random process?

Instructor

KAIST EE

- Yi, Yung (이융)
- Office: N1, 810
- `http://lanada.kaist.ac.kr`, `yiyung@kaist.edu`
- Computer Division
- A professor in KAIST EE since 2008
- Office hours: TBA

TAs

- A
- B
- C

- Mailing list: `ee210@lanada.kaist.ac.kr`
  - Please use KLMS for the questions about the lecture contents
  - This mailing list can be used for individual issues

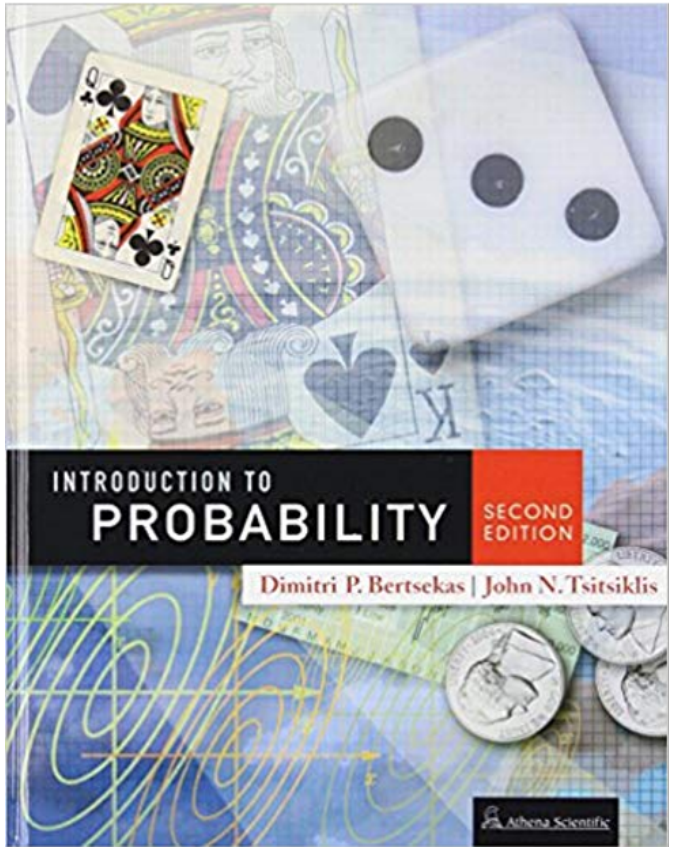
Course Homepage

KAIST EE

- `http://klms.kaist.ac.kr/`
- To download course materials
- To ask questions about everything
- To check your score on each homework/exam
- To see all the announcements about the class

Textbook

- Introduction to Probability (2nd edition)
  - MIT course textbook
  - Dimitri P. Bertsekas and John N. Tsitsiklis



Contents and Web Resources

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- Three Parts
  - Part I: Fundamentals of Probability
  - Part II: Inference and Limit Theorems
  - Part III: Random Processes
- On-line lectures at MIT and EdX
  - MIT: `http://bit.ly/2PkvYdr`
  - EdX: `http://bit.ly/3pHmZRd`
  - You can find older urls (2006, 2010, 2013) for this lecture, where there are many useful resources (recitation problems, homework problems, old exam problems, etc)
  - My lecture slides: based on theirs, but largely modified/reorganized/edited in many places for KAIST students

Grading

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- In-class quiz (sometimes)
- Basically, weekly homework, but often bi-weekly
- 3 Exams (2 mid-terms and 1 final)

- Class participation
- Grading portions: A (X%), B (Y%), C(Z%), D(W%), F ...

- Online lectures due to COVID-19 may change how to grade.

How to Communicate

- Most should be via KLMS
  - Technical questions about lectures, homework, and etc
- Please DO NOT individually send emails to Prof. Yung Yi and TAs (or making calls or sending KakaoTalk msgs) about the technical questions (course contents, homework, etc)
  - All the questions need to be shared among the students.
  - TAs and Prof. Yung Yi will handle your questions as soon as possible.
  - But, you can send an email to Prof. Yung Yi for the things that need to be individually discussed.

Questions?

Why Probability?

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- Assume that you are a designer of the following engineering systems. Good design?
  - a web server
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- Assume that you are a designer of the following engineering systems. Good design?
  - a web server
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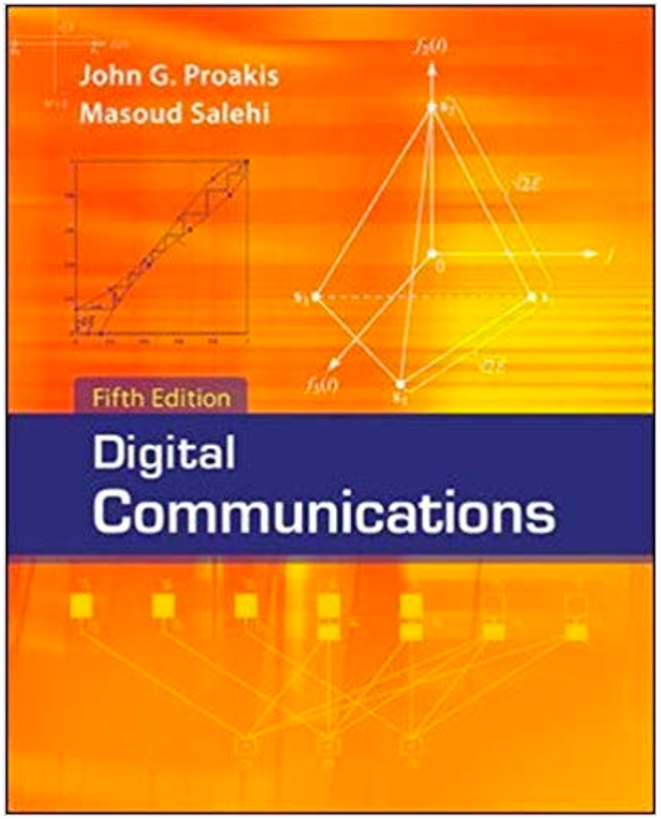
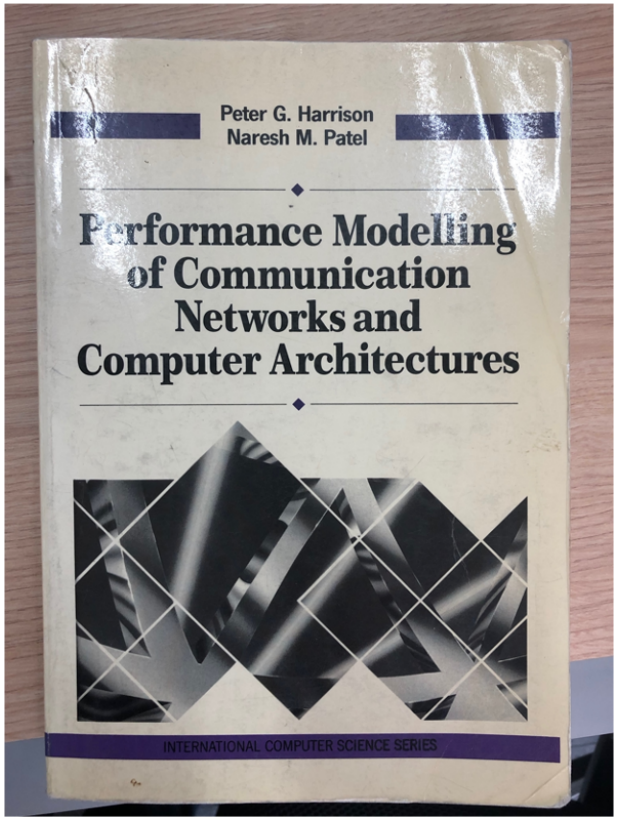
  - an AI-based image classifier
- From an engineering point of view,
  - System input
  - Algorithms in systems
  - Analysis of systems

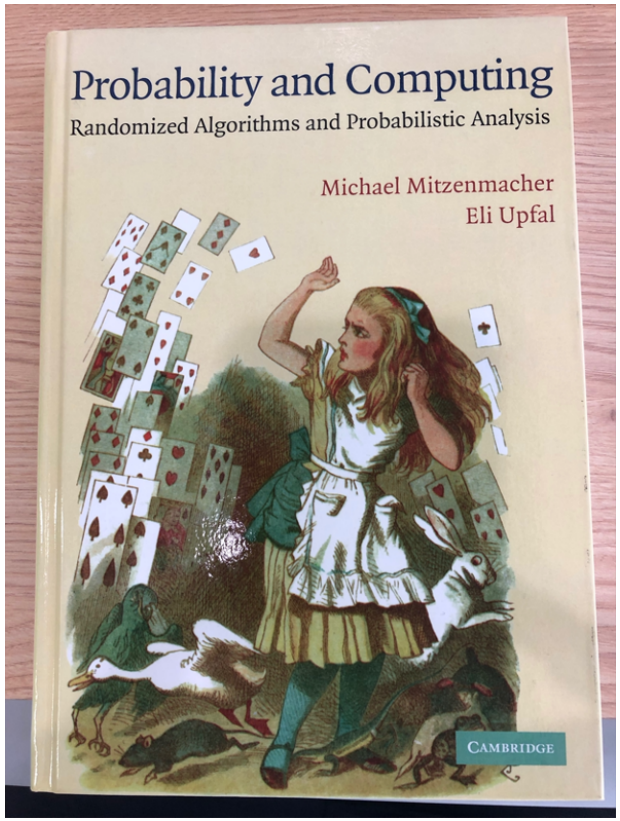
Textbook: Digital Communication



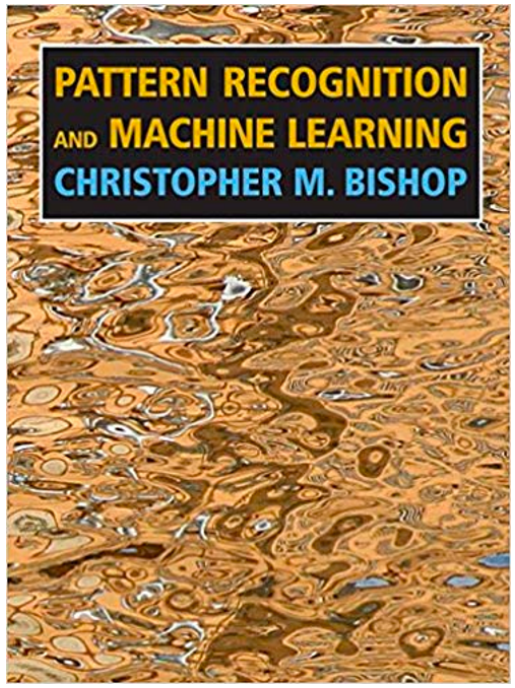
Textbook: Computer Networking



Textbook: Algorithm and Computing



Textbook: Machine Learning



These days, every area in CS and EE is directly or indirectly related to machine learning!

How to take this course? A designer's perspective

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- You have to design such a theory called "probability". How are you going to do it? Where are you going to start?
- You just have other basic mathematical theories such as set theory.

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- You just have other basic mathematical theories such as set theory.
- You need to get used to the English terms on probability (e.g., sample space = 표본공간, probability density function = 확률밀도함수).

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- We will take this exciting journey from the next lecture!

Questions?