# KECE471(00) 컴퓨터비젼

## Spring 2021

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The goal of computer vision is to extract useful information from images where the knowledge of machine learning is critical. Thus, in this course, we will cover the most fundamental topics on machine learning. Machine learning is one of most important mathematical tools in artificial intelligence and deep learning.

**Class lectures:** 월(3-4) 공학관 167 호 수(3-4) 공학관 167 호

**Instructor:** 설상훈, 공학관 404 호, 3290-3244, sull@korea.ac.kr

**TA:** 김재현, 공학관 438 호, 3290-3699, jhkim@mpeg.korea.ac.kr

**Pre-requisites:**
Probability

**Textbook and reference**:
Simon J.D. Prince, Computer Vision: Models, Learning, and Inference, Cambridge, 2012

David Barber, Bayesian Reasoning and Machine Learning, Cambridge, 2012

Christopher Bishop, Pattern Recognition and Machine Learning, Springer, 2006

Links:
http://www.computervisionmodels.com/

**Bulletin board:** http://dml.korea.ac.kr/lecture/

**Homework:**

**Grading**: midterm (40%), final (40%), HW and attendance (20%)

# Topics covered

1. Introduction
2. Probability
3. Probability distributions
4. Fitting probability models
5. Normal distribution
6. Learning and inference
7. Modeling complex data densities
8. Regression models
9. Classification models
10. Graphical models
11. Models for chains, trees and grids
12. Neural networks
13. Deep learning