

# USC Viterbi School of Engineering

**Note:** Due to the high demand, the course will have an **entrance exam** during the 1st week of Fall 2017.

1. D-clearance will be cleared **strictly** based on student's major and exam result.
2. No prerequisite is required.
3. Please register for the D-clearance queue. We will contact you about the exam days via e-mail near the start of the semester.

The following is the tentative syllabus.

## CSCI 599: Deep Learning and its Applications

Fall 2017—Wednesday—5:00pm-8:20pm (Units: 4)

**Location:** SGM 124

**Staff mailing list:** [deeplearning-staff-l@mymaillists.usc.edu](mailto:deeplearning-staff-l@mymaillists.usc.edu)

Please use the staff mailing list (not individual staff) for any general communication including questions.

**Instructor:** Joseph J. Lim

**Office:** SAL 214

**Office Hours:** W 4-5pm (tentative)

**E-mail:** limjj@usc.edu (please use [deeplearning-staff-l@mymaillists.usc.edu](mailto:deeplearning-staff-l@mymaillists.usc.edu) unless required)

### Teaching Assistants:

<b>Shao-Hua Sun</b> (Head TA) Office: TBA Office Hours: TBA E-mail: shaohuas@usc	<b>Youngwoon Lee</b> Office: TBA Office Hours: TBA E-mail: lywoon89@gmail	<b>Sitao Xiang</b> Office: TBA Office Hours: TBA E-mail: sitaoxia@usc
<b>TA #4</b> Office: TBA Office Hours: TBA E-mail: TBA	<b>TA #5</b> Office: TBA Office Hours: TBA E-mail: TBA	<b>TA #6</b> Office: TBA Office Hours: TBA E-mail: TBA
<b>TA #7</b> Office: TBA Office Hours: TBA E-mail: TBA	<b>TA #8</b> Office: TBA Office Hours: TBA E-mail: TBA	

## Course Description

Recently, many AI-related problems have seen great improvements – for example, from image search, to machine translations, to self-driving cars, and to medical problems. Our goal is to guide students to get familiar with these recent cutting-edge deep learning research in computer vision, natural language processing, and robotics. Through this course, students will gain the basic understanding of deep learning algorithms, and how to setup and solve problems involving deep learning techniques. The course will include couple practical assignments and the final course project. For the final course project, students can either select from our predefined list of projects or formulate their own problems.

## Prerequisite(s):

1. Proficiency in Python
2. College Calculus, Linear Algebra
3. Probability and Statistics
4. Equivalent knowledge of Machine Learning

## Required Readings and Supplementary Materials

Deep Learning (MIT Press) by Ian Goodfellow, Yoshua Bengio, and Aaron Courville. Free online version is available at <http://www.deeplearningbook.org/>

## Description and Assessment of Assignments

2 Assignments, 1 Midterm, and 1 Course project

## Grading Breakdown

Extra credit: each assignment (up to 1 points), midterm (up to 2 points), and course project (up to 3 points).

Assignment	Points	% of grade
Participation	5	5
Assignment #1	15	15
Assignment #2	20	20
Midterm	25	25
Course Project	35	35
TOTAL	100	100

## Assignment Submission Policy

All assignments need to be submitted in a paper form by 5pm of the due date.

## Additional Policies

There will be a total of 5 late days for the entire semester, to be used in **integer amounts** and distributed as the student sees fit. Any exception needs to be discussed within the first 2 weeks of the semester (no exception otherwise). Note that there is no late day for the final course project presentation.