

# CS230

Winter 2018  
Andrew Ng, Kian Katanforoosh

## Teaching Team

Course advisor



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Course coordinator



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## Teaching Assistants



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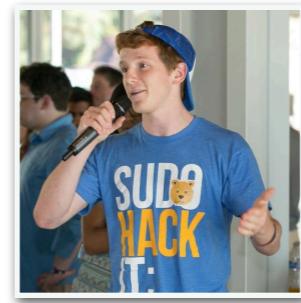
Lucio Dery



Olivier Moindrot



Patrick Cho



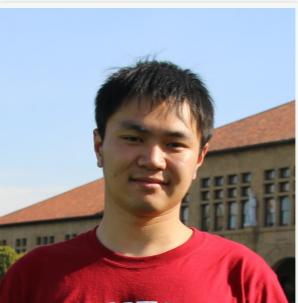
Russell Kaplan



Aarti Bagul



Aakash Mahajan



Xingyu Liu



Zach Barnes



Guillaume Genthal



Surag Nair



Soroosh Hemmati

# Course details

## Course details

5 “courses”:

**C1:** Neural Networks and Deep Learning

**C2:** Improving Deep Neural Networks

**C3:** Strategy for Machine Learning Projects

**C4:** Convolutional Neural Networks

**C5:** Sequence Models

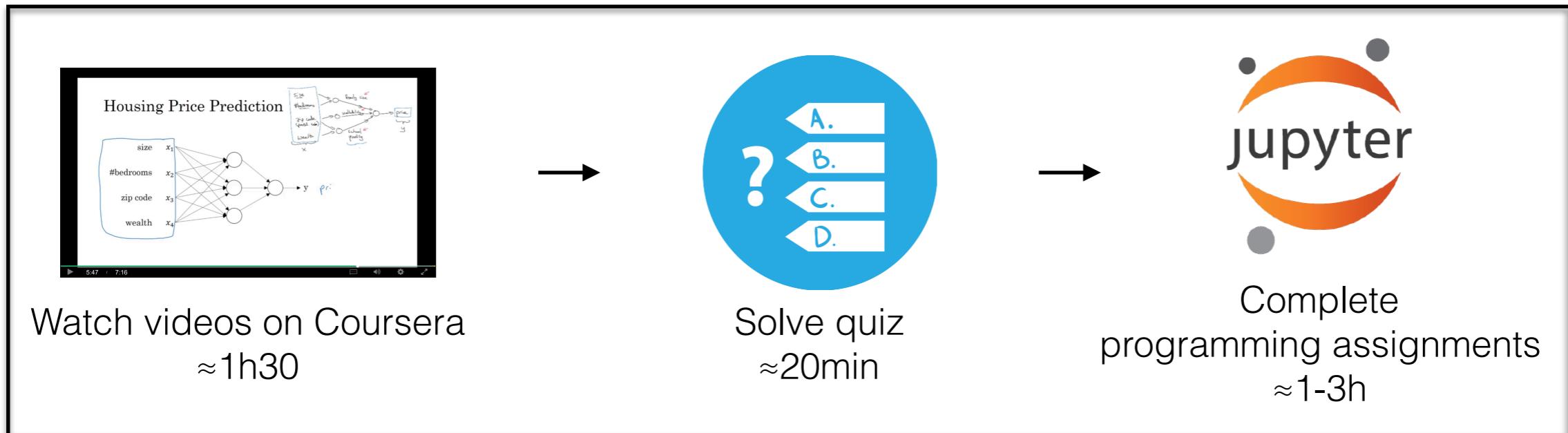
Example: C2M3: Course 2 Module 2

Schedule is on [cs230.stanford.edu](http://cs230.stanford.edu)

We are going to use the Coursera Platform:  
[www.coursera.org](http://www.coursera.org)

# One week in the life of a CS230 student

1 module



1 week of class  $\approx$  2 modules +



+ Work on  
final project

Go to in-class lecture  
≈1h20

Assignments and Quizzes are due every Thursday at 9am  
Do not follow the deadlines displayed on Coursera!!!

## Grading Formula

$$Grade = 0.02A + 0.08Q + 0.25Pa + 0.25M + 0.40Pr$$

A = Attendance

Q = Quizzes

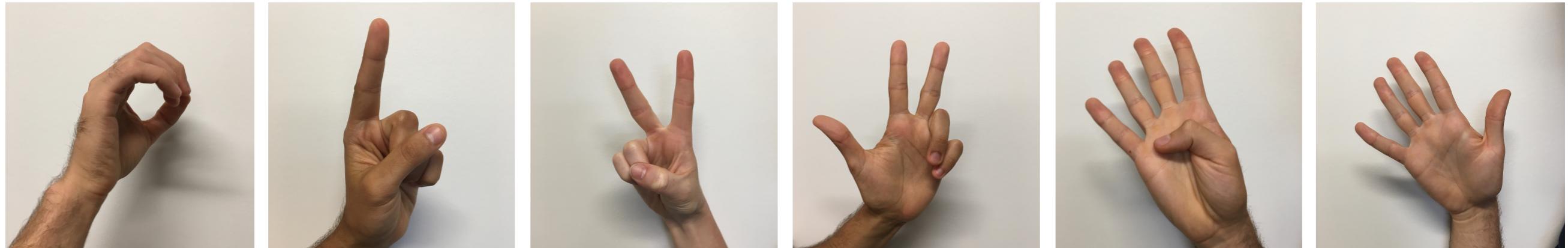
Pa = Programming assignments

M = Midterm

Pr = Final-project

# Programming assignments

## Projects: SIGN language detection



$$y = 0$$

$$\begin{bmatrix} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

$$y = 1$$

$$\begin{bmatrix} 0 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

$$y = 2$$

$$\begin{bmatrix} 0 \\ 0 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

$$y = 3$$

$$\begin{bmatrix} 0 \\ 0 \\ 0 \\ 1 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

$$y = 4$$

$$\begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 1 \\ 0 \\ 0 \end{bmatrix}$$

$$y = 5$$

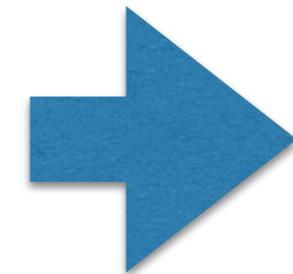
$$\begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 1 \end{bmatrix}$$

## Assignment: The Happy House

$y = 0$

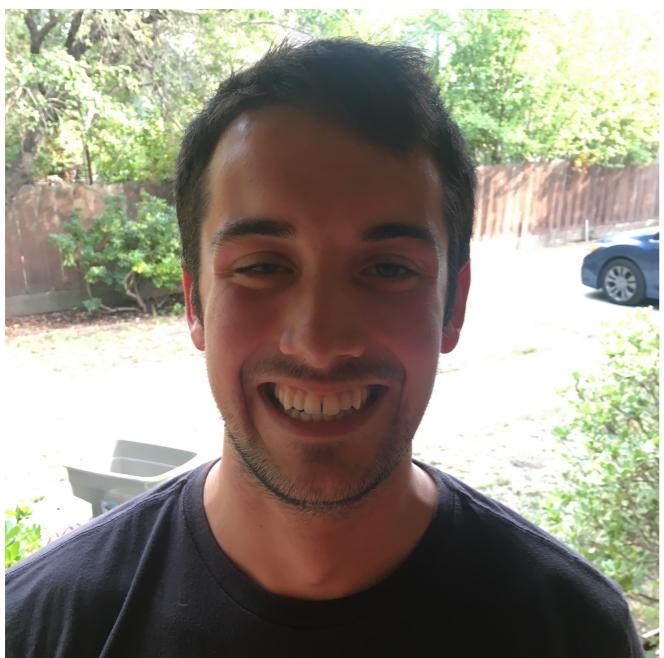


$y = 0$

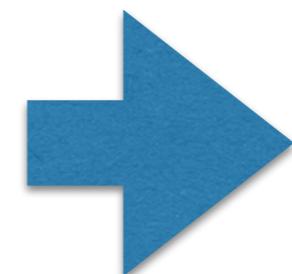


can't enter  
the Happy House

$y = 1$



$y = 1$



can enter  
the Happy House!

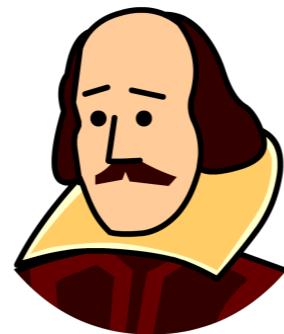
## Assignment: Object detection



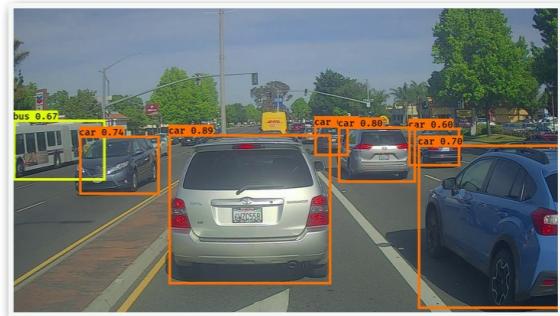
## Projects: others



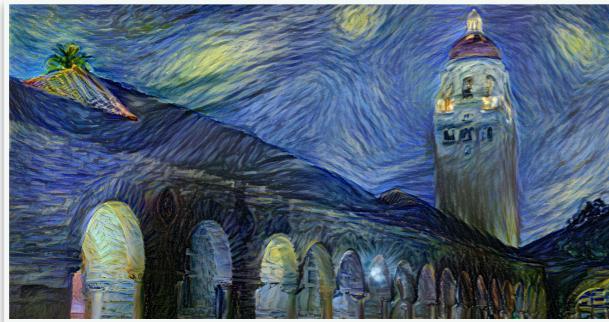
Music generation



Text generation



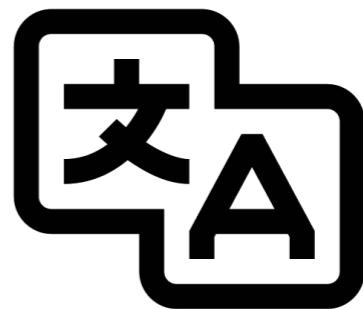
Car detection



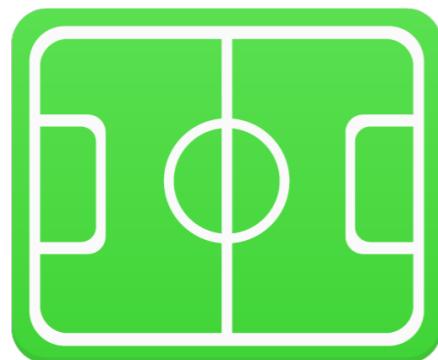
Art generation



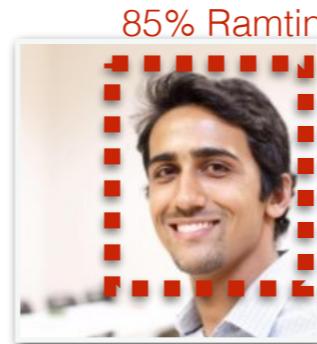
Trigger word detection



Machine translation



Optimal goalkeeper shoot prediction



Face recognition

“I love you”  
↓  
❤

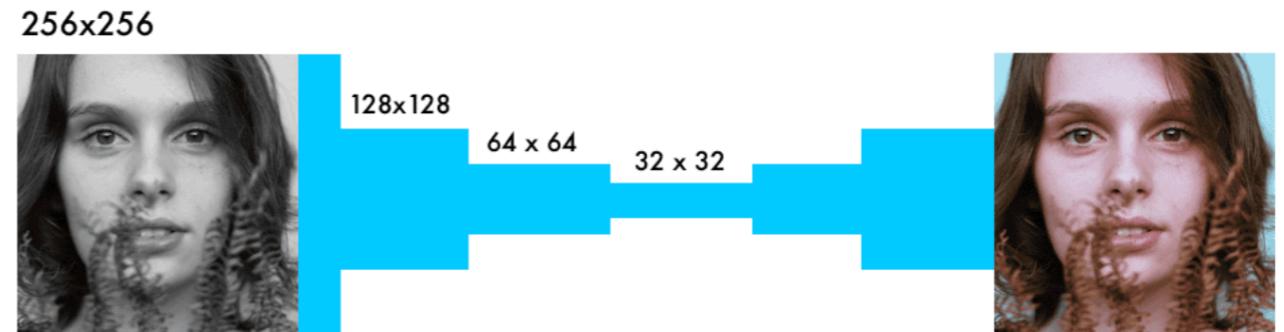
Emojifier

And many more...

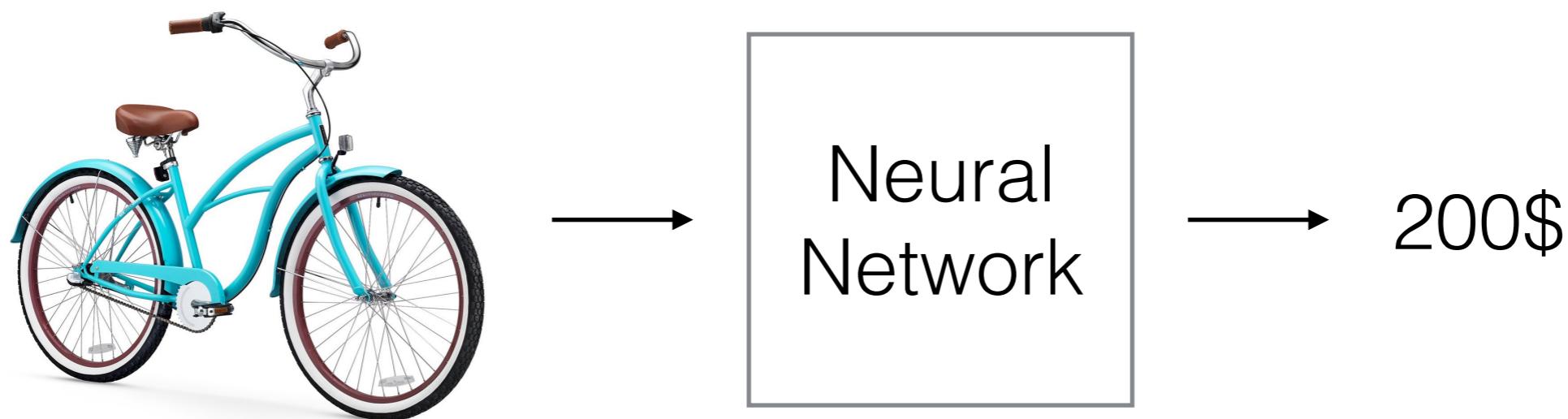
# Example of projects

## Projects: others

### Coloring Black&White pictures with Deep Learning



Predicting price of an object from a picture



**And many more...**

Picture to LateX

Predicting student drop-out rate in a school system

Visual Question Answering

Healthcare projects

Activity recognition

...

## To sum up

1. You will learn about wide range of deep learning topics
2. The course is very applied, you will code these applications
3. You have access to mentorship to build an outstanding project in 10 weeks

### For next Thursday (01/18) 9am:

- Create Coursera account and join the private session using the invitation
- Finish C1M1 & C1M2
- 2 Quizzes, 2 programming Assignments
- Start thinking about your project and find teammates

It's gonna be fun!