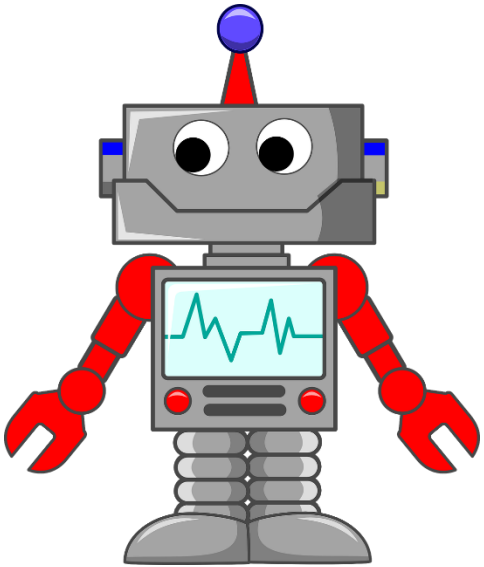
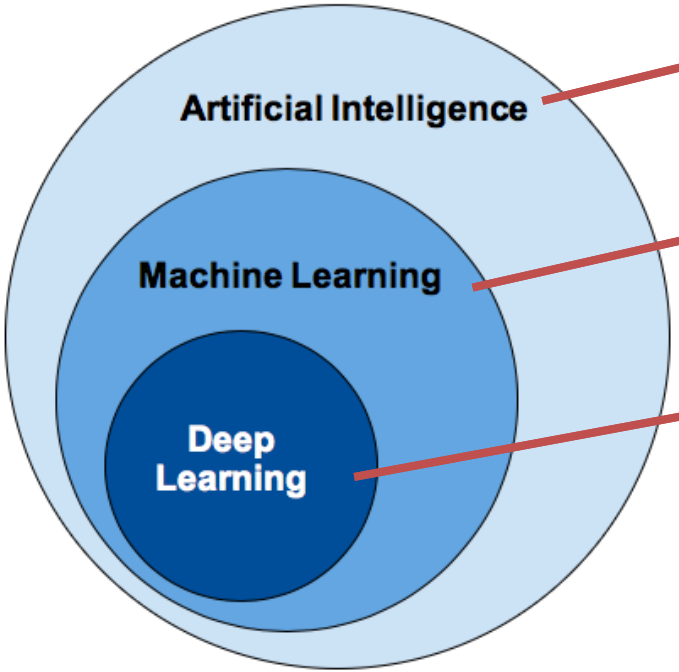


MACHINE LEARNING

INTRODUCTION

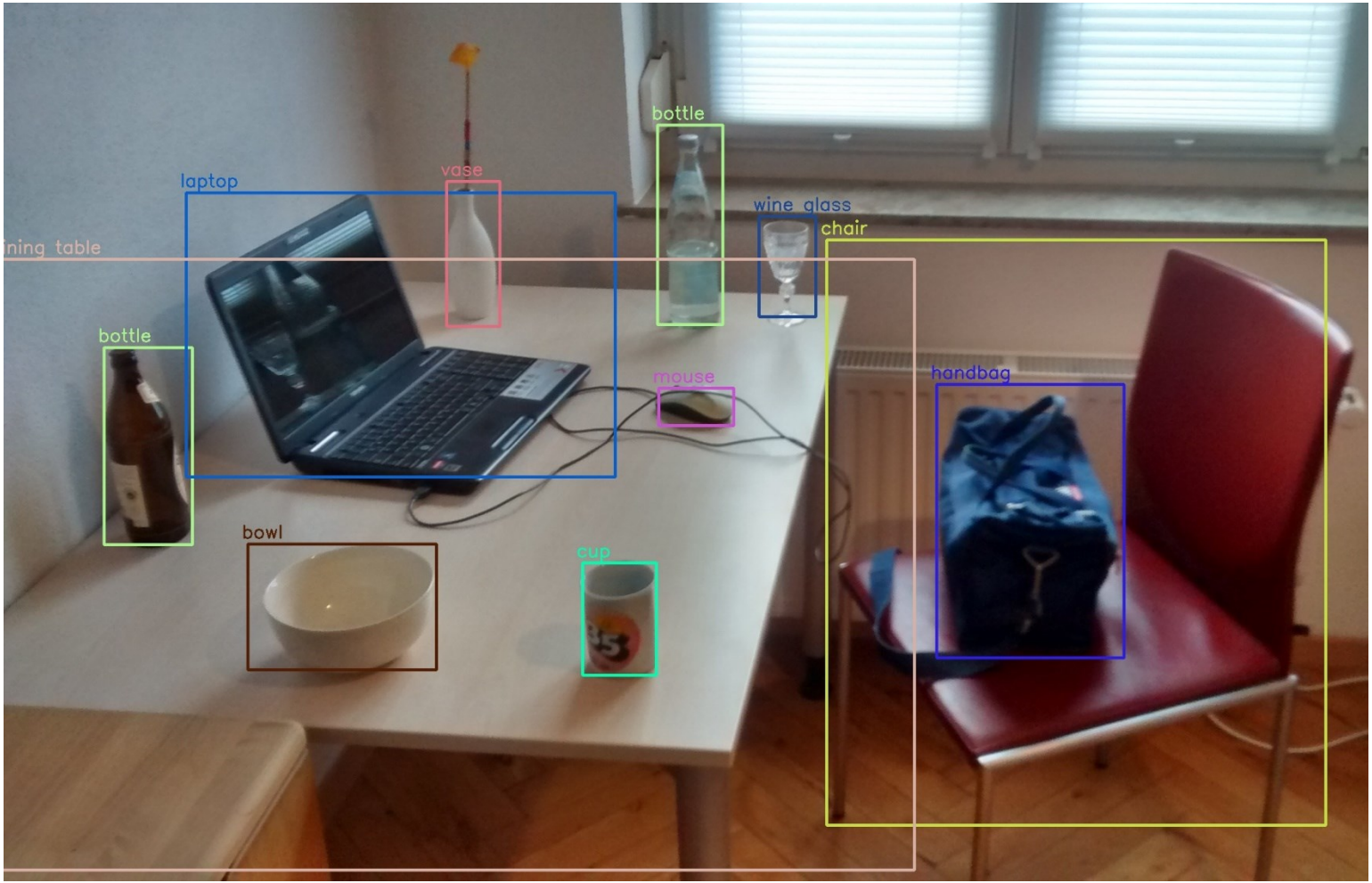
Machine learning and Deep learning



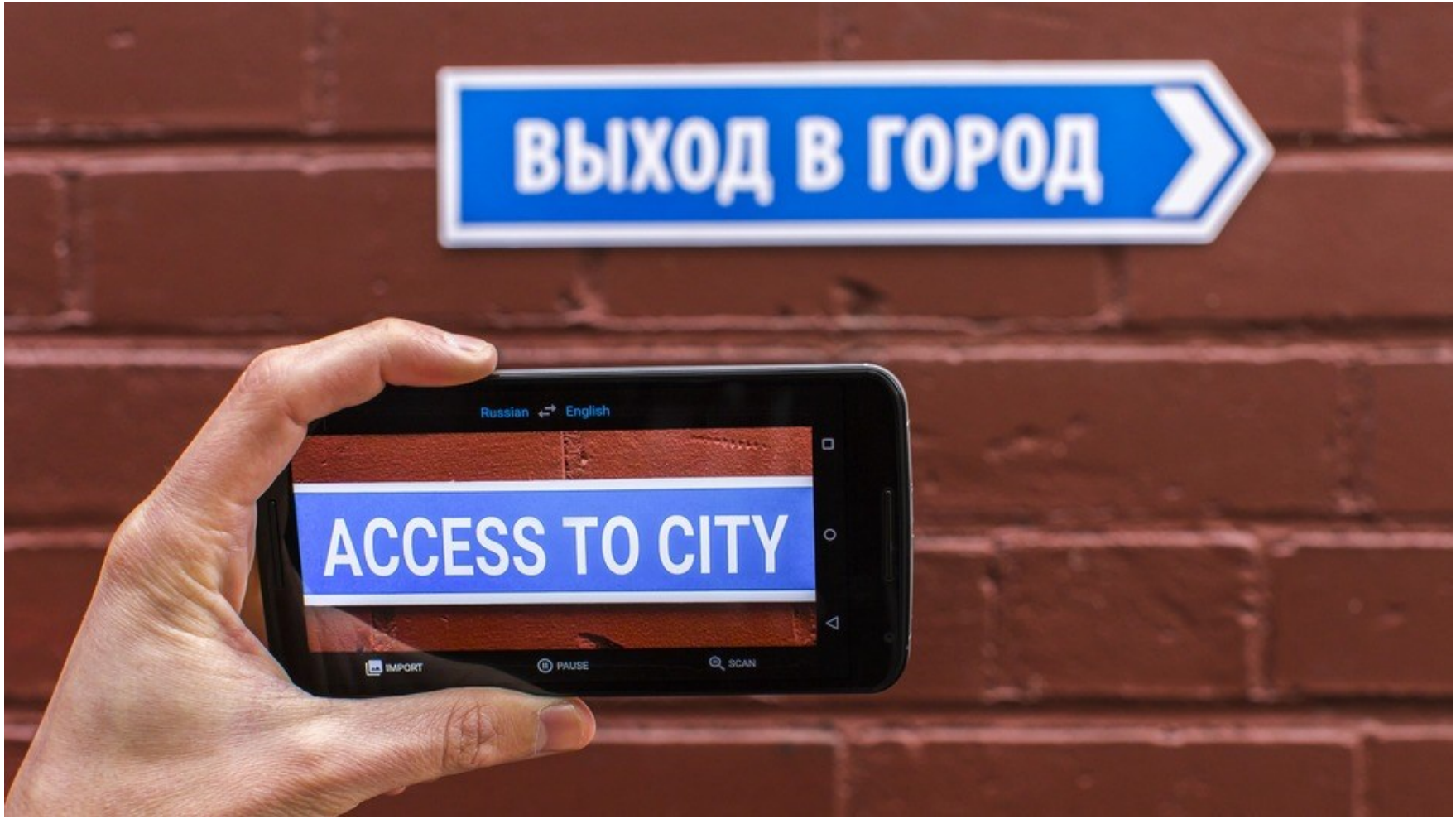
Various methods

Learn from data

Learn from lots of data
Based on Artificial Neural Networks, find how to visualize features


bottle
vase
laptop
wine glass
chair
ining table
bottle
mouse
handbag
bowl
cup

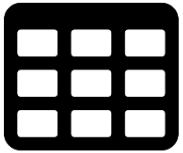
NVTiep


ВЫХОД В ГОРОД
Russian
English
ACCESS TO CITY
IMPORT
PAUSE
SCAN

NVTiep

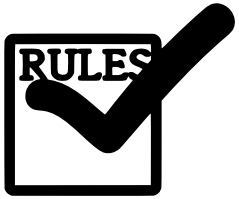

good
morning
buenos
días
9:41 AM
VOICE
Good morning
buenos días
buenos días

NVTiep



Lecture Contents

- Build the foundation: programming, maths
- First models: Linear Regression, Logistic Regression, Softmax, Neural Network
- Deep neural networks: CNN, RNN
- Applications: image classification, object detection, text classification and machine translation



Conventions

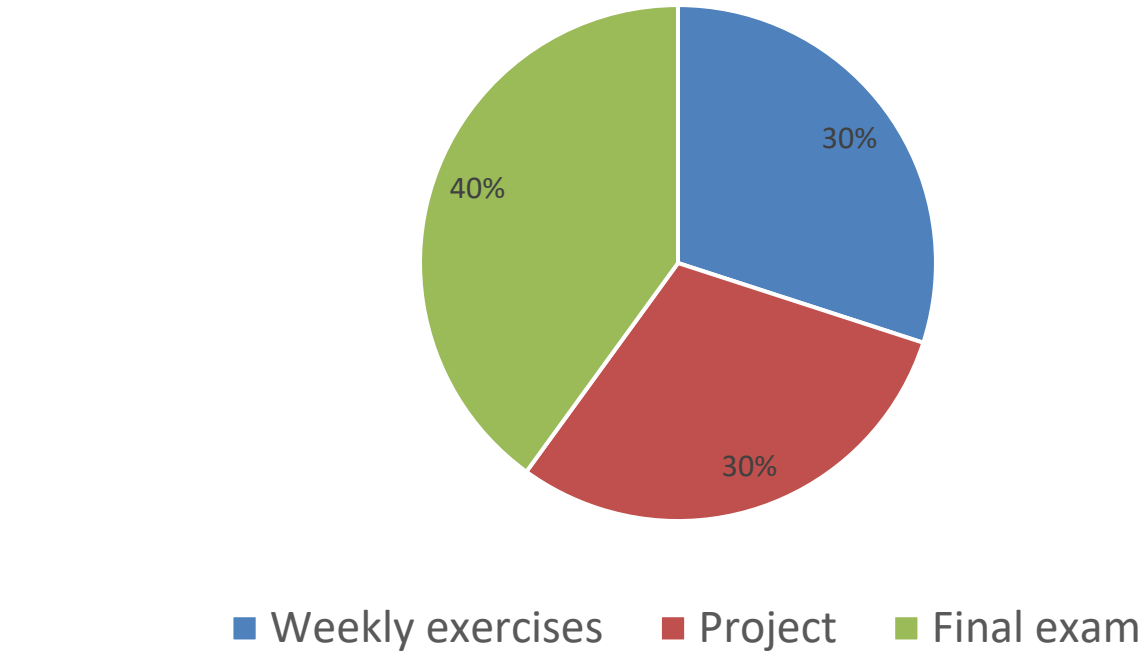
- Use Python v.3.6 + Tensorflow v.2.0
- Complete weekly exercises
- Active in Q&A

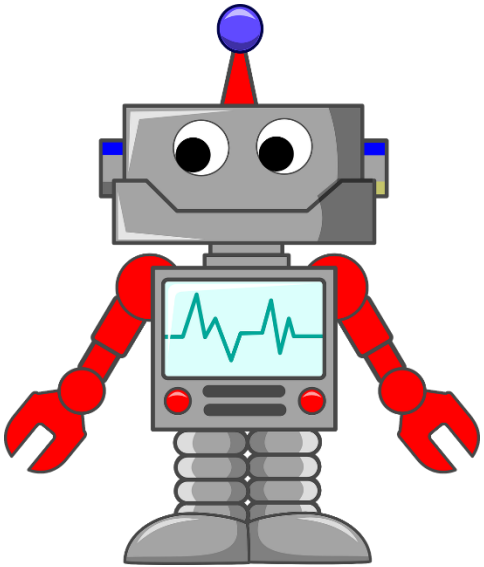
References

Deep Learning, A. Courville, I. Goodfellow và Y. Bengio, 2016

Course: https://www.coursera.org/specializations/deep-learning

Grading Policy





MACHINE LEARNING

PYTHON PROGRAMMING

How to learn a new programming language

0. Compiler or Interpreter
1. Data types, operators
2. Conditional structure
3. Loop structure
4. Function/ Procedure
5. Object Oriented Programming
6. Programming language’s Popular Libraries

How to learn a new programming language

0. Compiler or Interpreter

	Compiler	Interpreter
Pros	- Fast execution - Few runtime errors	- Fast implementation - Flexible source code
Cons	- Slow implementation - Rigid souce code, lack of flexibility	- Slow execution - Logical errors

Python is an Interpreter

How to learn a new programming language

0. Compiler or Interpreter

Python popular because

- Applications Programming (Django)
- Data processing (pandas, numpy,…)
- AI, ML programming (Tensorflow, PyTorch,…)

How to learn a new programming language

1. Data types, operators
- Basic data types and operators
- Advanced data types

When learning Python: install Anaconda 3.6 with integrated popular libraries

How to learn a new programming language

2. Conditional structure
- 2 branches
- Multi-branches

How to learn a new programming language

3. Loop structure

- Loop with known number of iterations
- Loop with unknown number of iterations
- List comprehension: initialize data from loop structure

How to learn a new programming language

4. Function/ Procedure
- Syntax
- Arguments: reference, pass by value

How to learn a new programming language

5. Object Oriented Programming – OOP

- 3 features in OOP
- Syntax in OOP

How to learn a new programming language

6. Programming language’s Popular Libraries

- Available libraries (build-in)
- Most-used libraries