NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
"IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE"

Computer Vision

The Programming Assignment #1 | Autumn, 2021

Instructor

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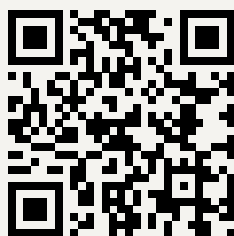✉ iuriy.kochura@gmail.com

Info

📢 English

🖥 Tuesday 02:15 PM - 3:50 PM

🔧 6 prog. assignments + project

👥 Final exam

Course Materials

Description

This course will introduce you to deep learning approaches that are used in cutting-edge research in computer vision and provide practical experience:

- Using of neural networks (fully connected and convolutional layers, forward and backward propagation, activation functions, ...)

- Training of neural networks (initialization, optimization, regularization, model choice, ...)

Prerequisites

- Basic familiarity with Python 3.

- An understanding of fundamental concepts in linear algebra and probability.

Grading

30%	Programming assignments (5% each)
40%	Project
30%	Final exam

> **Note!** The requisition of admission to semester control (final exam) is
>
> $$\text{Programming assignments} + \text{Project} \geq 42\%$$

The Igor Sikorsky Kyiv Polytechnic Institute rating scale:

A = 95–100	Excellent
B = 85–94	Good
C = 75–84	
D = 65–74	Satisfactory
E = 60–64	
F < 60	Fail
Fx < 42	
Violation of the Honor Code	Removed

Honor Code

You may discuss the programming assignments in groups. However, each student must write down their own solutions independently.

You are obligated to follow the Igor Sikorsky Kyiv Polytechnic Institute Honor Code and all of the following rules in this course:

1. You must submit solutions, reports or program code that are your own. The usage of solutions or program code that are not your own and presenting them for one's own work is plagiarism and a serious violation of the basic academic standards.

2. You must not share your solution code with other students, nor ask others to share their solutions with you.

3. You must indicate on your submission any assistance you received.

The Perceptron: Forward Propagation

> *"He who learns but does not think is lost.*
> *He who thinks but does not learn is in great danger."*
>
> – Confucius (551 - 479 BC)

Programming Assignment

Complete the programming assignment provided by the link: Press ME.

You should implement some functions in Python. Lines of code that you should implement are marked as:

```
1  ##FIXME
```

Evaluation

The programming assignment is worth a total of 5 points.

Submission

Submit the programming assignment on the assignment page: https://cloud.comsys.kpi.ua/s/wy5y2eSS8CoLnH7

Please upload the following script with solutions: `First-name-Last-name-Group_Perceptron.ipynb`

Deadline: due at 11:59 PM, Thursday, October 14

Note! Assignments that will be completed after the deadline will be evaluated no more than 50% of the maximum point.