



MASTER DEGREE
ONLINE

MASTER OF COMPUTER VISION

Program announce and description



Program team



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computer science



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Nizhny Novgorod,
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"Master of computer
vision"



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"Master of computer
vision"



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Head of study office
of master degree
program "Master of
computer vision"



Four campuses -
one university



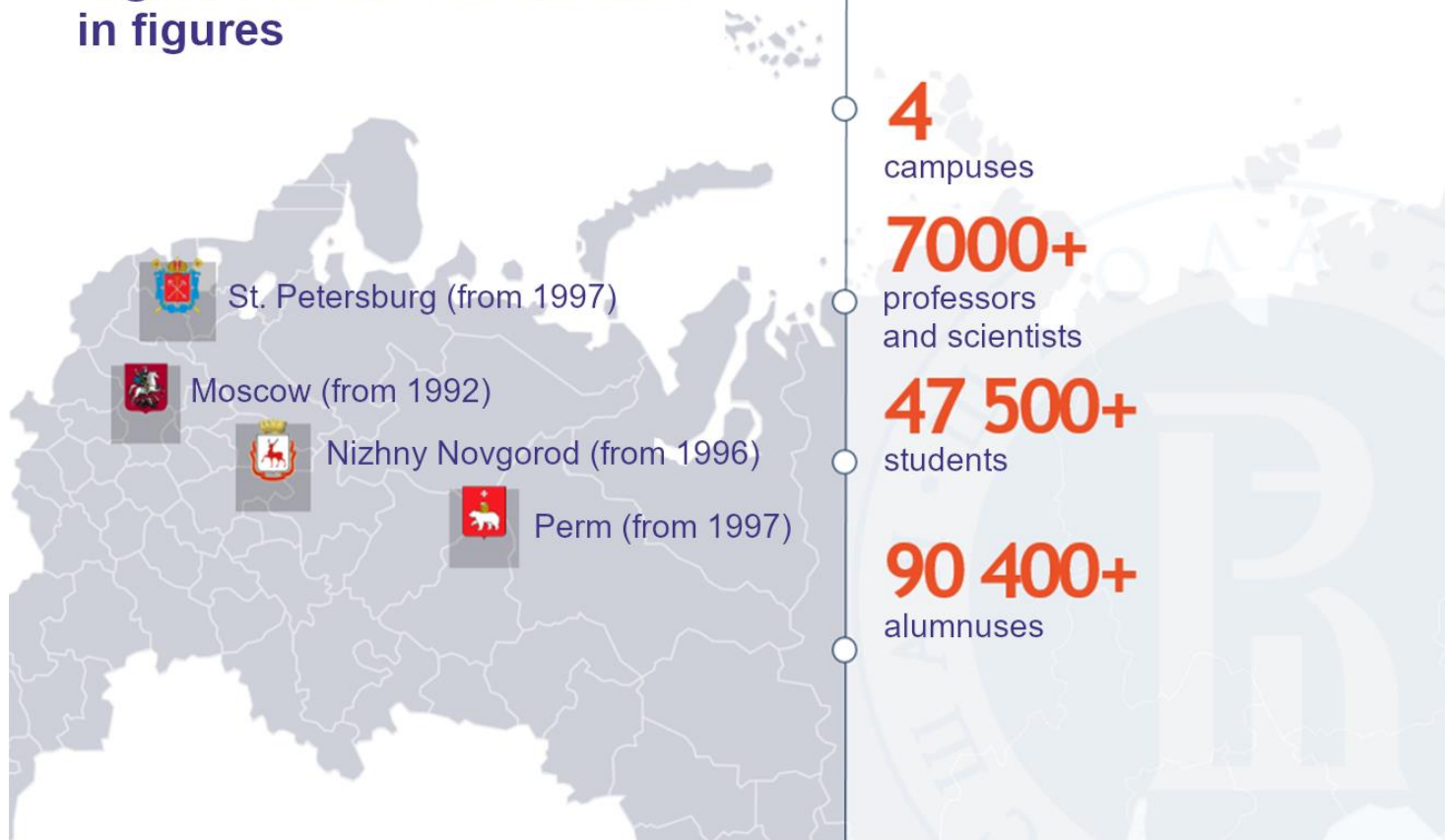
About HSE

HSE is a distributed university
with uniform requirements for

- the quality of education
- student recruiting
- qualifications and scientific activity of professors



Higher school of Economics in figures





Four campuses – one educational environment

- Unified educational standard
- Unified for all campuses and programs **state approved diploma**
- LMS – Learning Management System, **unified informational system** for students of all campuses
- Personal student`s account opens access to all HSE services
- Unified timetable – **online cros-campus disciplines** allow students from different cities to study together



About Nizhny Novgorod campus





Plentiful environment

- HSE Nizhny Novgorod campus has 11 years experience in CV

We been working on computer vision more than 11 years in the frame of Data Manning master degree. During this sustained period, specialists have accumulated sufficient experience to open a full - fledged program dedicated only to computer vision.

- Unique International Laboratory of Algorithms and Technologies for Network Analysis (LATNA) focused on data analysis in CV

LATNA is based in HSE Nizhny Novgorod campus and deeply works on data analysis research projects in computer vision field under supervision of **Dr. Panos M. Pardalos** from University of Florida.

- Open CV has started in Nizhny Novgorod
- Most of modern industrial IT companies Intel, Harman, Huawei placed their RnD projects in CV in Nizhny Novgorod
- Master of Computer vision academic supervisor – Andrey Savchenko coordinates international group of the researches in computer vision

All students are able to participate in professional researches in CV and pretend to be included into list of publications and papers authors

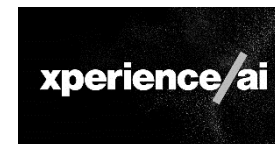




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NRU HSE Nizhny Novgorod partners

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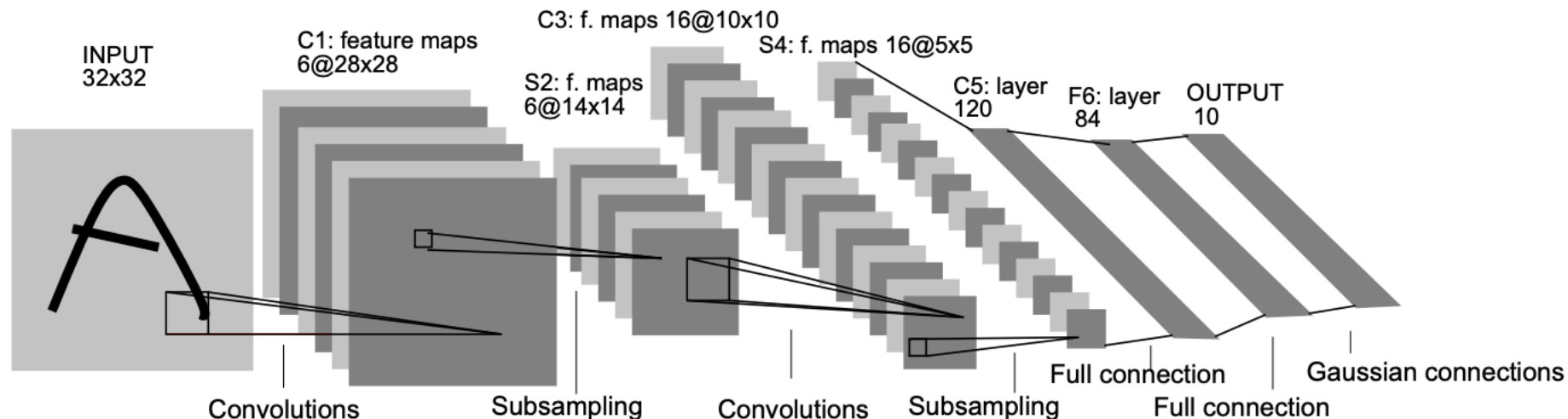
Present and future of computer vision: why it is worth to study





One of the first commercial products

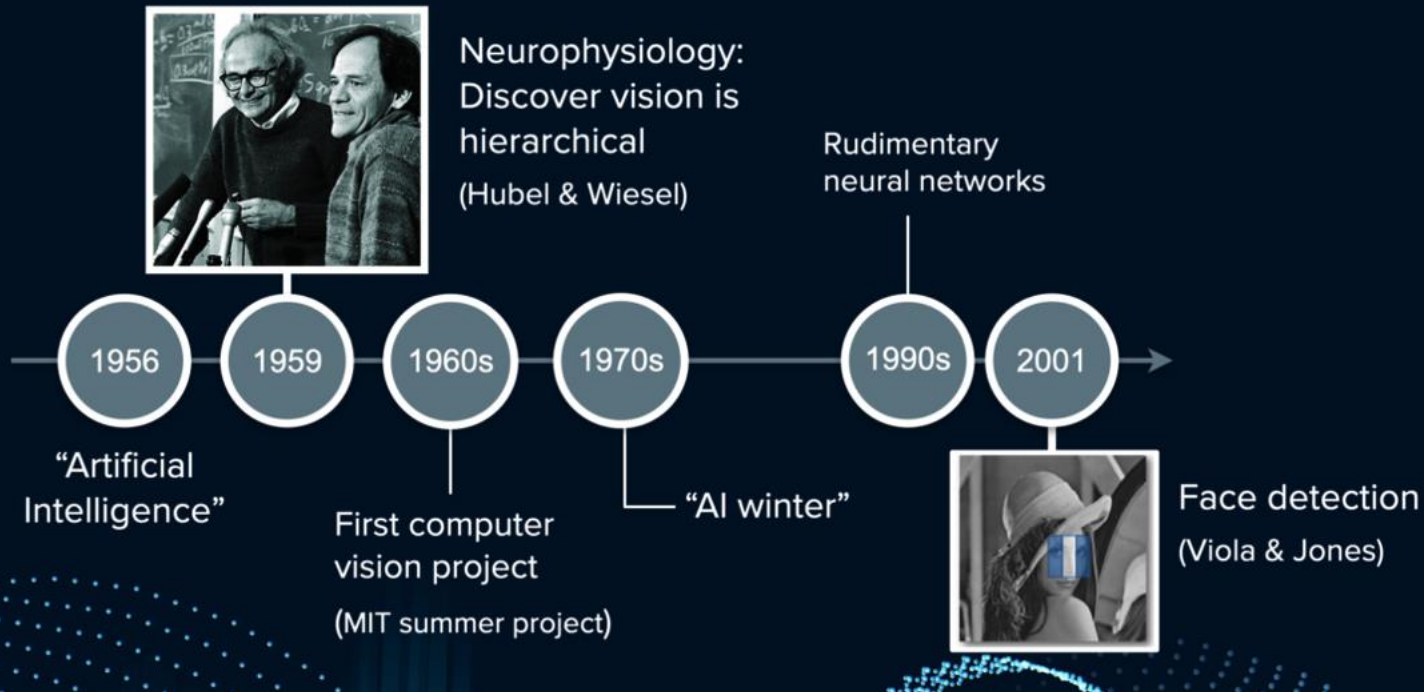
Reading zip codes [LeCun et al. 1989, 1998]





Computer vision has a long history

A brief history





And then...

- Very large datasets. ImageNet:
 - 1.5M of images
 - 1000 classes
- General-Purpose Graphical Processing Units
 - 1 billion operations per second.



Matchstick



Flute



Racket



Sea lion



Strawberry



Bathing cap





AlexNet – revolution in computer vision (2012)

Deep neural network
trained on NVIDIA GPU
«with all the tricks Yann
came up with in the last
20 years, plus dropout”

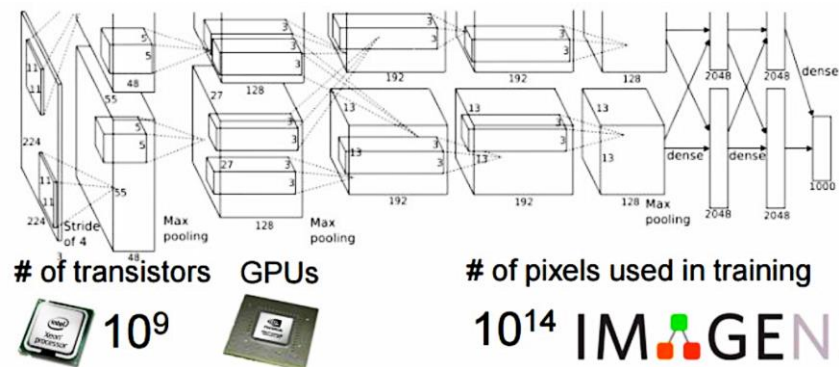
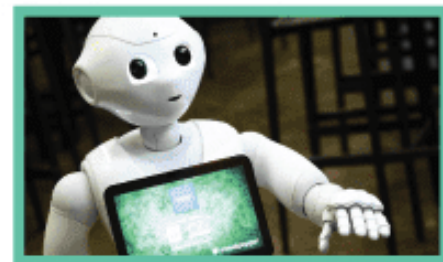
2012 Teams	%error
Supervision (Toronto)	15.3
ISI (Tokyo)	26.1
VGG (Oxford)	26.9
XRCE/INRIA	27.0
UvA (Amsterdam)	29.6
INRIA/LEAR	33.4



AlexNet achieves
breakthrough success at
the ILSVRC

2012

Success with deep neural networks
paves the way for AI-enabled computer
vision to infiltrate Silicon Valley





Current status

- Practically every large corporation solves computer vision tasks



Google Cloud



CloudSight™



clarifai



KAIROS

eyeris



ImageVision®

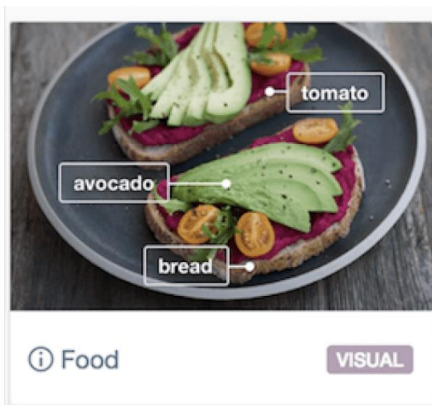


Microsoft



ANIMETRICS

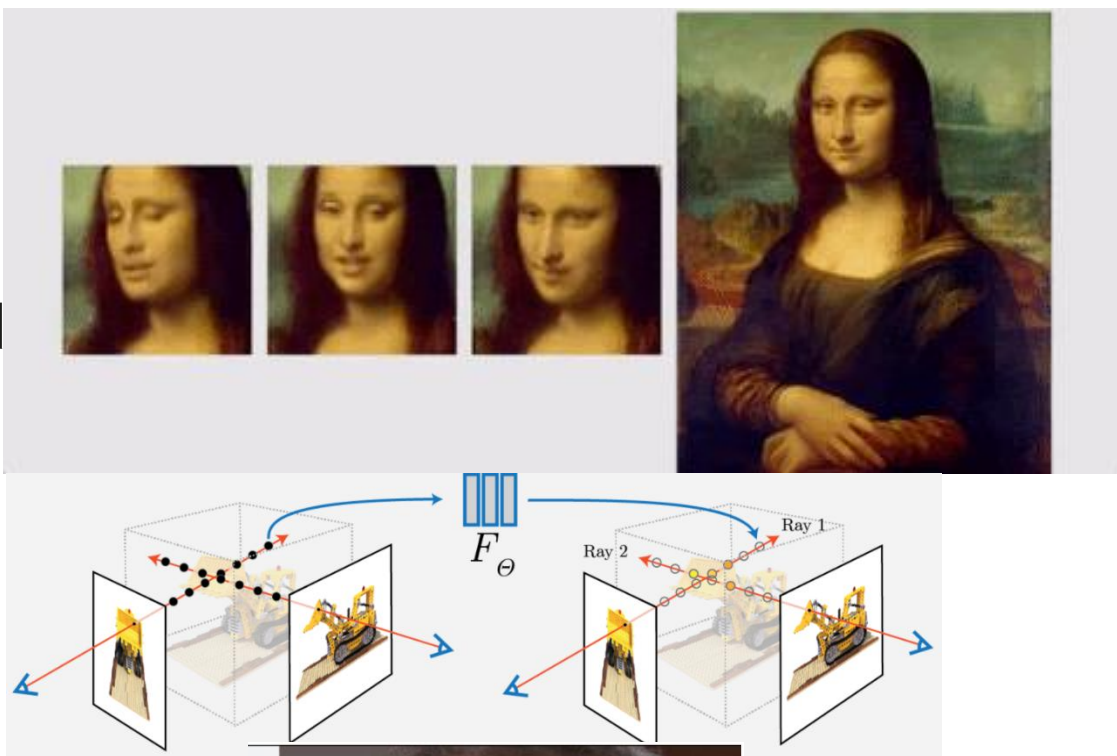
- Many techniques have reached a certain level of maturity





Trends

- Generative models and 3D view synthesis
- Autonomous vehicles
- Emotional AI
- Mobile AI



Master of Computer Vision

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coursera | 

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 Sign up for the Admission Webinar on February 17

Online Degrees > Computer Science > Master of Computer Vision > Overview



Master of Computer Vision

HSE University

 Share

Get started today

Request more information about this program.

Apply

Request Info

Overview

Admissions

Academics

Tuition & Financing

Student Experience

Careers

About the University

Accredited diploma

Offered by HSE University

Taught in English

Engage in group discussions with professors and peers

24 months

16 courses + project

100% online

Hands-on learning from anywhere, no travel required

660,000 – 1,320,000 RUB*

Depends on geographic location [Learn more about payment options](#)

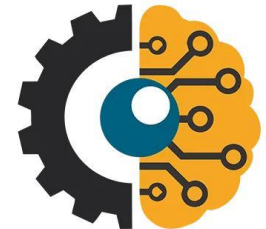


WHO IS THIS DEGREE FOR?

- Anyone who wants to study computer vision
- Bachelor or master degree diploma is required
- Presence of mathematical, technical or IT background is necessary

WHAT YOU`LL STUDY

- Foundations of computer vision algorithms
- Modern technologies of artificial intelligence and image processing
- Practical cases with deep learning frameworks
- Development of software with computer vision capabilities





WHAT YOU RECEIVE FINISHING MCV DEGREE?

- State approved diploma
- A set of solving 16 problems for a portfolio including real projects that partner companies will offer
- Scientific research under the supervision of professors from HSE University
- Acquaintance with specialists of leading companies in the field of computer vision
- Professional applied skills for all CV cases



YOUR CAREER OPPORTUNITIES WITH COMPUTER VISION



Computer Vision Software Engineer



Deep Learning Engineer



3D Perception/Computer Vision Algorithm Engineer



Computer Vision Testing Engineer



Computer Vision Scientist



Program structure

source

- 2 years program
- 8 courses per year
- 6 weeks every course
- Pre-recorded lectures and screencasts
- Ungraded quizzes
- Graded quizzes and programming assignments
- Staff graded assignments
- 3 webinars per each course and staff contact hours
- 120 ECTS credits



Special features of the program

- Fully ONLINE program designed for Coursera
- ~ 20-30 hours per week
- 2 courses in parallel
- Quality support:
Synchronous live sessions
Fast communication via chats and forums
Direct communication with professors at office hours

Lots of practice:

- 16 projects for your portfolio
- Mini educational projects in each course
- Special project courses
- Case study
- 6 industrial partners



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Structure and content of the program



Semester 1. Modules 1,2

Object-oriented programming



Mathematics for Computer Vision

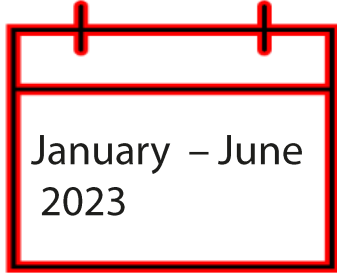
2D image processing



Data analysis and machine
learning



Structure and content of the program



Semester 2. Modules 3,4

Modern operation research
methods



Project "Machine learning in
Computer Vision"

Deep learning in Computer Vision



Architecture of computing
systems



Structure and content of the program



Semester 3. Modules 1,2

Visual geometry and 3D image
processing



Applied tasks of Computer Vision

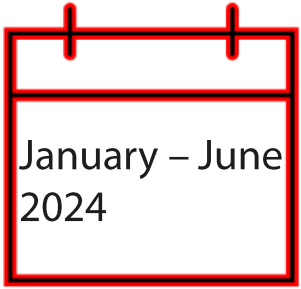
Modern tools for solving
Computer Vision problems



Project “Deep learning in
Computer Vision”



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Structure and content of the program

Semester 4. Modules 3,4

Deep generative models



Computer vision for mobile
devices

Software engineering of
Computer Vision project



Final project

Academical and industrial partners of “Master of computer vision” program

Business partners – bring to the program projects and professional expertise

- Intel (Open CV in Nizhny Novgorod)
- Harman
- Itseez
- Xperience AI
- Huawei research center in Nizhny Novgorod

Academic partners – bring to the program modern scientific approaches to problem solving

- Laboratory of Algorithms and Technologies for Network Analysis (LATNA)



- Joint educational and research projects





Tuition

- For the fall 2022 cohort tuition fee is 1 320 000 Rubles ~ 18 000\$
 - Discounts 20% - 50% available
 - Up to 6 instalments during 2 years
-

Approximate curriculum schedule

- 1 semester: September 2022 – December 2022
 - 2 semester: January 2023 – June 2023
 - 3 semester: September 2023 – December 2023
 - 4 semester: January 2024 – June 2024
-

HOW TO APPLY THE PROGRAM?



Registration for Russian citizens

Will start in April 2022

Registration for foreign citizens



<https://nnov.hse.ru/en/ma/vision/tracks>

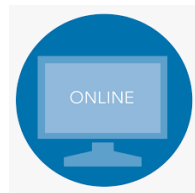
Applications accepted till 15 Aug. 2022

HOW TO APPLY THE PROGRAM?

2

Entrance exam

30



4 Sessions



31.03.2022

25.05.2022

23.06.2022

17.08.2022



min. 31/100 points

4 tasks

3 x



1 x



120 minutes

HOW TO APPLY THE PROGRAM?



Payment

31

- ONLINE



- Deadline: August 20th 2022
- No commission
- Minimum 176 000 RUB ~2349,58 USD



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For the future information, please, visit our HSE web page

Master's Programme

Master of Computer Vision

A new applied online master's programme created jointly with practitioners at companies developing projects in the field of computer vision.

[Get more info](#) [Apply 2022](#)

[Home](#) [For Prospective Students](#) [For Students](#)

17 February

Live webinar: Start your career with Master of Computer Vision

[Programme Facts](#)

[How to Apply](#)

[Entrance exam](#)

[Webinars](#)

[International Admissions](#)

2 years

eLearning programme

660 000 –
1 320 000 RUB for the
entire period of study

[HSE Scholarships for International and Russian applicants/ Tuition Fees and Scholarships](#)

ENG

[Instruction in English](#)



[State Accreditation](#)

[Degree Programme Documents](#)



Academic Supervisor
[Savchenko, Andrey](#)



Manager
[Labanina, Alina](#)



Promo Master of Computer Vision v 2.5



[Смотреть...](#)



[Поделиться...](#)





**MASTER DEGREE
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Announcement of the following events



March 3, 19:00
Webinar
**“Modern tasks of
computer vision”**



March 17, 19:00
Webinar
**“How to prepare for the
entrance exam”**