

International Laboratory for Applied Network Research (ANR-Lab)

Master in Applied Statistics with Network Analysis

Master of Data and Network Analytics

coursera

The background features an abstract network diagram. A large, semi-transparent blue circle is centered. Within and around this circle are several smaller blue and orange circles, some of which are connected by thin white lines, forming a network structure. Additionally, there are several orange circles of varying sizes scattered across the dark blue background, some with vertical orange lines extending from them.

Network and analytics programs online and offline: expanding the opportunities

Introduction

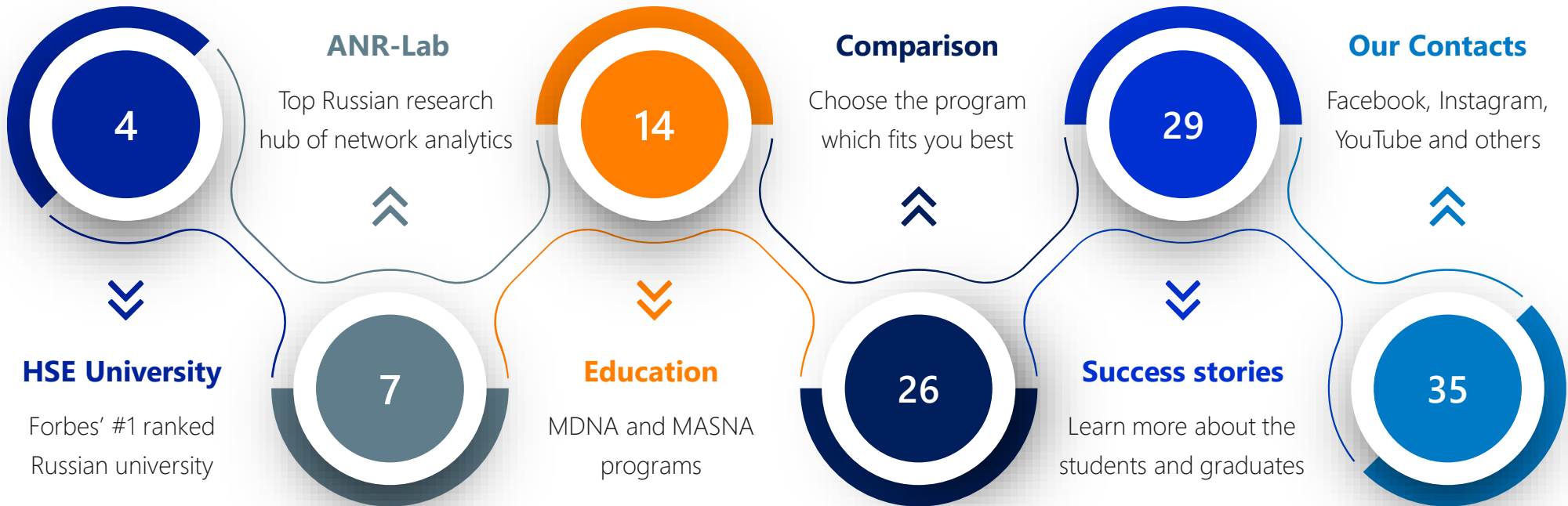
We are on a mission to make modern data and network analytics available **to everyone**

If you are a practitioner or former student with non-mathematical or non-IT background and want to dive into the world of analytics, then you should consider applying to our programs.

Here we introduce HSE University and ANR-lab that offers online and offline programs in applied statistics, data, and network analytics.

Content

Learn more about us



Press the circle with number to navigate through the document



Part 1

HSE University

HSE University

HSE in numbers

HSE University is a Russian leader in education and one of the prominent economics and social sciences universities in eastern Europe and Eurasia

Press for more info

4

campuses

47 500+

students

90 400+

graduates
of main programs

227

online courses

5 mln

course participants

195

countries

Top ranks

HSE University is top-ranked

by many internationally recognized agencies



✓ Mathematics



✓ Statistical and
operations research



✓ Computer science &
information systems



Part 2

ANR-lab



What we do

We develop and test new methods for analyzing network data and apply them in empirical research in various scientific fields.



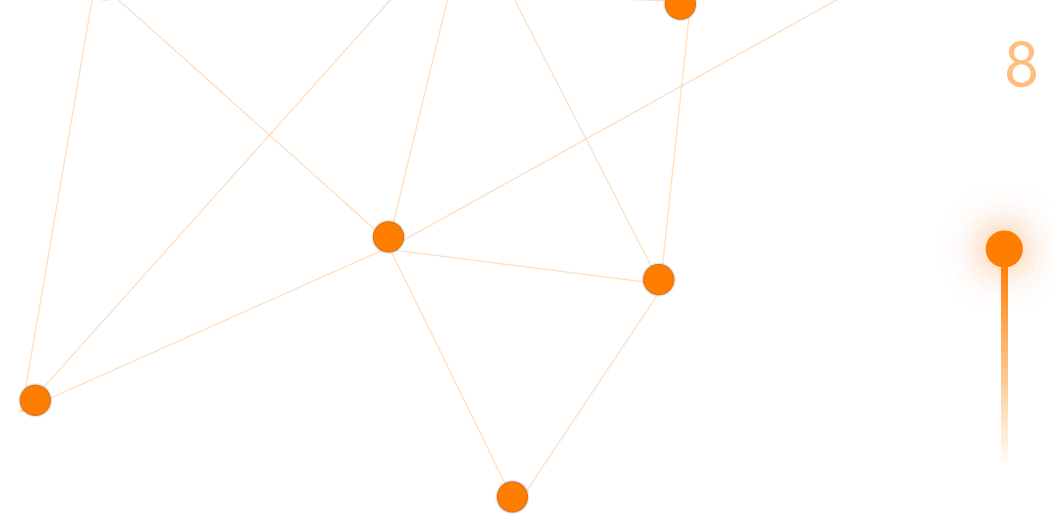
Who we are

The ANR-Lab members are researchers from sociology, political science, economics, statistics, management, computer linguistics, and computer science.



Worldwide cooperation

We maintain cooperation with Russian and international scientists and research groups working in the field of network analysis.



About ANR-lab

ANR-lab

International laboratory
for Applied Network Research

Press for more info

About ANR-Lab

A full-service think tank

Research



- Development of **school** of applied network analysis
- **Popularization** of network-analytic methods, starting with bachelor's students
- Tight integration into Russian and international academic **community**

Education



- **Master's** programs:
 - "Applied Statistics with Network Analysis" (offline)
 - "Master of Data and Network Analytics" (online)
- Short **educational events** in Russia and internationally

Consulting



- **Applied consulting** (fee-based) for business, governments and NGO
 - **Clients:** SAS Russia, VW Group Rus, Rosatom, Peredvizhnaya Energetika
- **Analytical workshop:** free consulting services for HSE students, faculty and community in general
 - Opened in October 2019, Over **70 clients**

The team

Meet the founders and scientific advisors

Valentina Kuskova



PhD Indiana University

- Head of the Laboratory
- Deputy First Vice Rector
- Academic supervisor of MDNA

Stanley Wasserman



PhD Harvard

- Scientific advisor in 2014-2017
- Founder of several programs and departments in the US
- Founding editor, Network Science

Anuška Ferligoj



PhD, Professor,
Ljubljana University

- Scientific advisor since 2017
- Head, Center for Social Informatics and Methodology

Vladimir Batagelj



PhD, Professor Emeritus
University of Ljubljana

- Senior Research Fellow
- Program Pajek for analysis and visualization of large network data

Research groups

ANR-lab has several research groups

- The Laboratory regularly organizes **scientific seminars** for joint discussion of projects and their presentation to a broad audience, and **summer schools** and special events for **advanced training** with leading experts in Social network analysis (SNA)
- ANR-Lab's members regularly attend **scientific conferences** and events and have scientific **publications** in their research areas

Network science and analytics

Head: Valentina Kuskova

Policy network science

Head: Dmitry Zaytsev

Networks in sociology

Head: Daria Maltseva

Network methodology in sociology

Head: Irina Zangieva

Partners

Official partners

Collaborations with universities and businesses worldwide



University of Ljubljana



Specialization

We have launched “Network Analytics Specialization on Coursera

Individual courses are free
\$49 for business-approved specialization certificate

Press for more info



CONTEMPORARY DATA
ANALYSIS: SURVEY AND
BEST PRACTICES



NETWORK ANALYSIS



BUSINESS ANALYTICS:
DIVERSITY OF PRACTICAL
APPLICATIONS

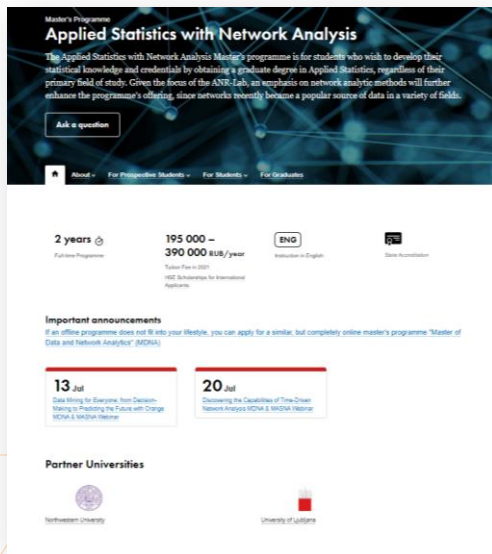


INTRODUCTION TO TEXT
MINING WITH R



Part 3

MDNA and MASNA programs



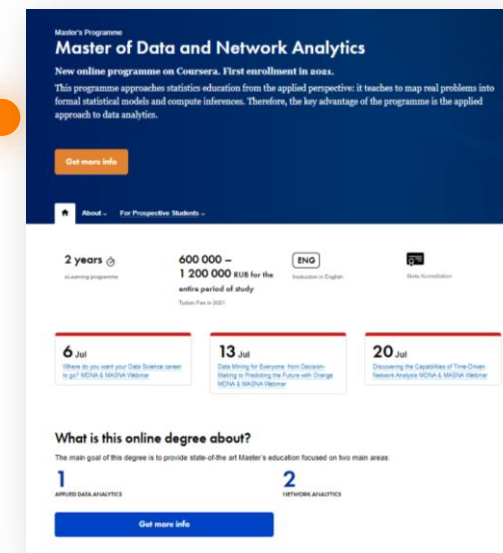
Master of Applied Statistics with Network Analysis (MASNA)

Offline program
Moscow, Russia

MDNA is an online mirror
of MASNA programme

Master of Data and Network Analytics (MDNA)

Online program
Coursera



Both programs offer state-of-the-art analytics with networks

1

APPLIED DATA

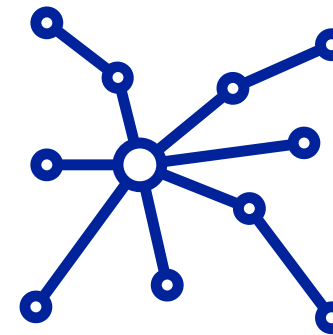


ANALYTICS



2

NETWORK



Opportunities

We teach analytics to everyone

If you want to use complex models in your analytics career

If you need some additional knowledge in applying methods for solving problems

If you never had any analytical training, but want to join the field



Business professionals

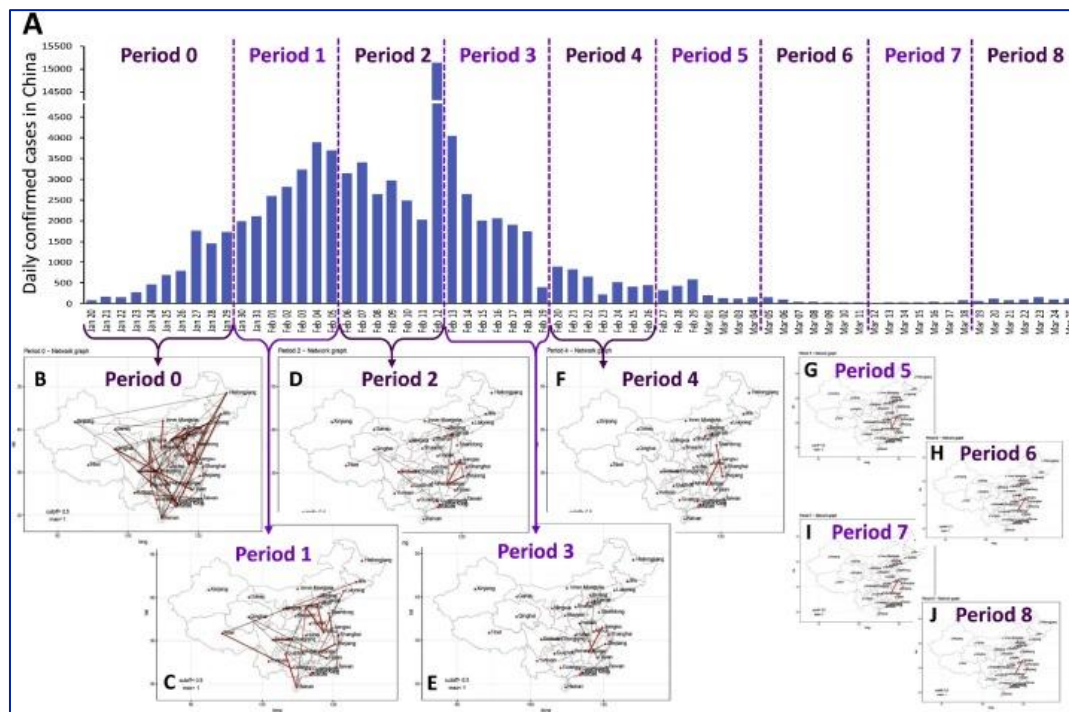


Students with non-mathematical background



Professionals who want to dive into data





New challenges require newest approaches:
Analysis of COVID-19 spread using **network analytics**

<https://www.sciencedirect.com/science/article/pii/S1201971220303179>

Be in trend

New trends and knowledge paradigms

01

State-of-the art analytic tools

03

New analytic capabilities

02

Largest network-analytic center in Russia

04

World-renowned professors

05

Applied, hands-on approach to master's education in analytics

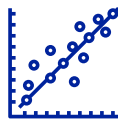
Skills

Skills that markets demand today

Exploratory data analysis



Linear models



Time-series analysis



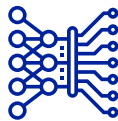
Social network analysis



Machine learning



Neural networks



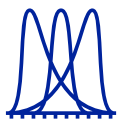
Big data analysis



Data mining



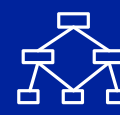
Nonparametric methods



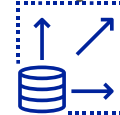
Text and semantic
text analysis



Structural equation
modelling



Multidimensional data
analysis



Skills

Responding to market signals: hands-on skills



What programming languages?

- Python
- C++
- SQL
- Java
- Vertica
- LaTeX
- Basic (VBA)



What data analysis packages?

- R
- SAS
- STATA
- Orange
- LISREL
- Mplus
- PIM-DEASoft
- GMDH Forecasting and Planning Software



What network analytics software?

- Pajek
- Gephi
- Visone
- Ucinet
- NetDraw
- ORA



01

Most of the courses are offered at **different levels** – basic and advanced

02

Course menu – you create your own study plan from the menu of over 30 courses

03

Applied focus and final capstone project: it can be a research paper or real-life case

Best choice



6 reasons to study with us

04

Community of experts and analytics enthusiasts

05

World-renowned professors. We invited the “stars” of analytics profession

06

We teach to formulate the **problem first**, and then select a method for solving the problem



Education

You will go through sophisticated and rigorous education in data analytics

Let's start your learning path

1. Theory-based

- foundations of statistics, network analysis and machine learning
- working knowledge base in data analytics in business and academics



3. Math and models

- mathematics, tailored to your comfort level
- understand how to use different types of models in practice

$f(x)$



2. Problem solving

- define problems and choose the right tools and approaches to solve them
- work with real-world problems and understand how data analytics can solve them



4. Practical cases

cases from finance to Covid-19

Study track

We offer three tracks for your education

- Acquire techniques and skills for **employment in business, industry and government corporations**
- Learn to work with **modern methods** of data analysis and machine learning
- Develop **programming skills** in different languages

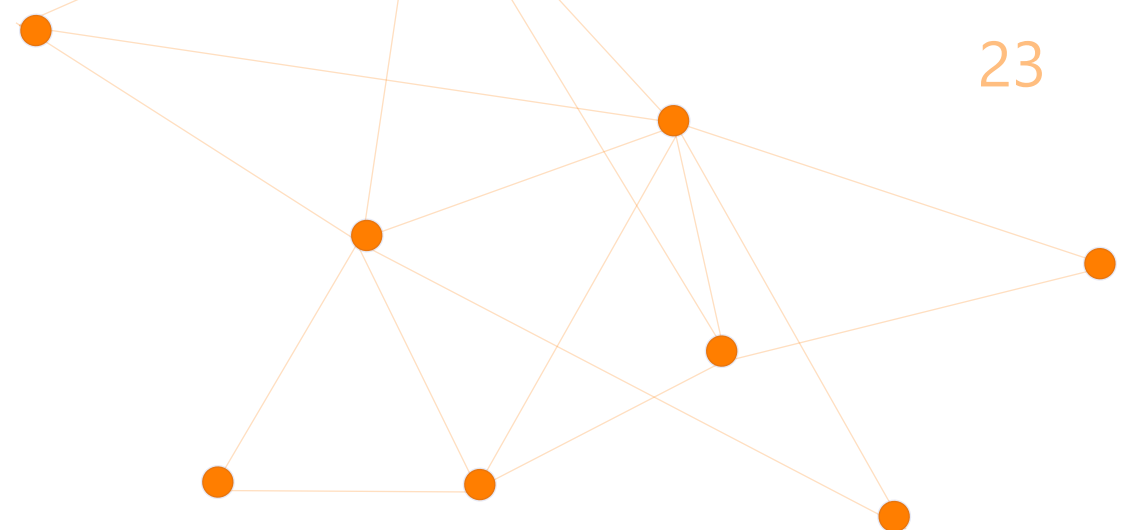
Business Analytics

- Bring together **social and decision sciences** to develop and refine new methodological approaches to social studies
- Apply newly learned skills to **interdisciplinary research** problems
- Learn modern methods of data analysis and prepare for leading **Ph.D. programs**

Computational Social Sciences

- Learn the methods for working with the “hottest” new trend in analytics: **network data**
- Gain the deeper understanding of the **role of connections** among people, businesses and society
- Stand out in the job market: become an **expert** in a coveted field of network analytics

Social Network Analysis




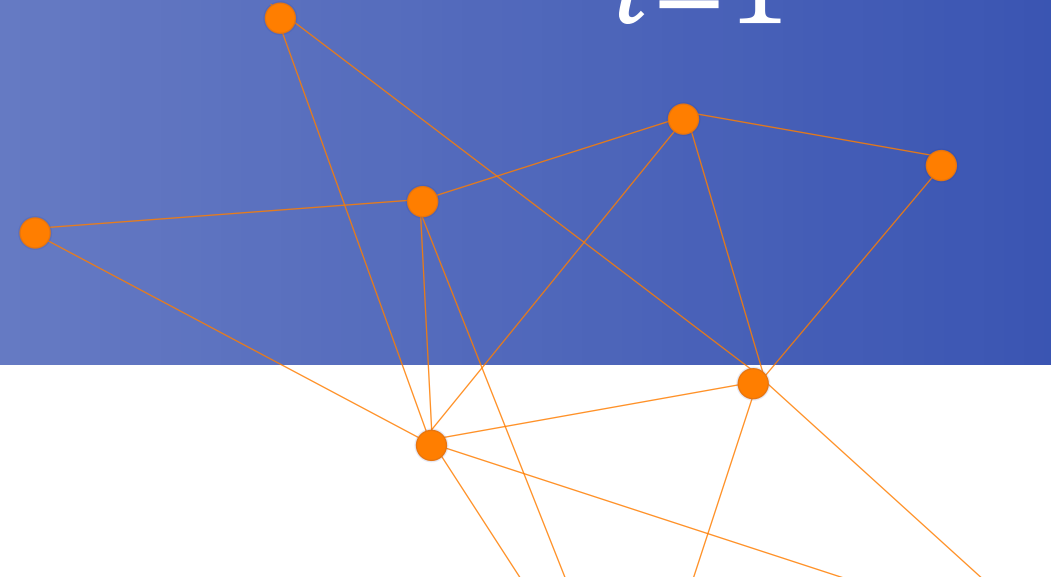
Courses

Education component: overall curriculum

- Create your individual study plan from the menu of courses
- Courses organized in thematic blocks

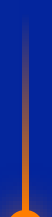
Program blocks	Blocks of disciplines	
Mathematical disciplines	<ul style="list-style-type: none"> • Bayesian data analysis • Exploratory data analysis • Stochastic models 	<ul style="list-style-type: none"> • Nonparametric Theory and Data Analysis • Multidimensional data analysis • Nonparametric Theory and Data Analysis
Programming skills	<ul style="list-style-type: none"> • Algorithms and databases • Programming languages • Internet technologies 	
Statistics and Network Methodology	<ul style="list-style-type: none"> • Contemporary Data Analysis • Contemporary Decision Sciences Methods 	<ul style="list-style-type: none"> • Multilevel models • Random graphs
Applied Network Analysis	Mathematical: <ul style="list-style-type: none"> • Social Network Analysis • Advanced Topics in SNA • Longitudinal data analysis • Methods of Statistical Consulting 	Applied: <ul style="list-style-type: none"> • Social networks in education • Business networks • Organizational consulting

Press for more info


$$B > \frac{1}{n} \sum_{i=1}^n x_i$$


**We want you to be
the best you can be**

**... and we'll do what it takes
to help you get there**

- We offer the range of choices and opportunities simply not available anywhere else
 - We give you the best career choice possible
- 



Part 4

Make your choice

Difference

MASNA & MDNA comparison

Components	MASNA	MDNA
Name	"Applied statistics with network analysis"	"Master of Data and Network Analytics"
Program aim	Research, mostly academic	Practice-oriented
Program mission	Training of specialists for the development of interdisciplinary research in a variety of fields of knowledge	Training of specialists for the development and implementation of the latest analytics in public and corporate sectors
Format	Offline	Online (Coursera platform)
Program focus	Mathematical and methodological approach to data analysis, including the collection of primary data through surveys, scraping, and other methods	Business-oriented (more generally, practice-oriented) approach to data analysis, including data organization in databases and network analytics
Future career	Mostly research (~25% of existing graduates enrolled to PhD programs), most students are interned in research centers (ANR Lab and others)	Mostly practical, in the business and public sector
Final Exam	Master Thesis, Research Article	Applied Project
Study Tracks	Phd Track "Computational Social Sciences"; Business Analytics; Combined (Universal) Track	Network Analytics, Business Analytics (practice-oriented) tracks, Computational Social Sciences

Difference

MASNA & MDNA cost comparison

Programs' price estimation for the whole period of studying: in \$, where 1\$ = 80 rubles

Components	MASNA	MDNA
Study period (months)	22	18-22
Tuition for the duration of the program	\$9,750	\$15,000
Flights and Transfer (minimal est.: 2 times to travel home)	\$1,500	\$0
Accommodation in Moscow (minimal est. to rent a 1 bedroom in Moscow)	\$7,500	\$0
Living expenses in Moscow	\$5,000	0
Total price (without discount)	\$23,500	\$15,000
Discounts	5-15% merit-based	20-50% residence-based
Total price (with discount)	\$21,300	\$7,500

Price estimation for the **whole period** of studying (18-22 months)





Part 5

Success stories

Career

Amazing career tracks

Students and graduates become experts in data analysis and visualization, machine learning, network analysis, and business analytics.

All needed skills

A wonderful serenity has taken possession of my entire soul, like these sweet mornings of spring which I enjoy with my whole heart.

01

Data analysts in all fields
(product analysts., business
analysts, etc.)

02

Statistical consultants

03

Researchers in major
consulting firms

04

Background for future
PhD studies

Companies

Our graduates work
in top Russian and
international
companies

Finance and IT



CROC

Consulting

McKinsey
& Company

Deloitte.



Research

ELSEVIER



WORLD BANK GROUP



THOMSON REUTERS

Markets

Yandex

VOLKSWAGEN





*"It gave me a clear understanding of algorithms for working with **absolutely different data**"*

- Alexander Alimov -

Opinion

Feedback and reviews of our graduates

Press for more info



*"The knowledge base is significantly replenished, and I want to **test it in practice** as soon as possible"*

- Maria Ilyina -

PH.D programs

Our graduates enter top programs in Europe

The program is part of the research center and actively trains scientific personnel.

28% of graduates have already enrolled in PhD programs, from the HSE University to Oxford.

Press for more info



**The University
of Manchester, UK**

Artem Volgin



**University
of Bristol, UK**

Ekaterina Melianova



**Oxford Internet
Institute, UK**

Liza Chernenko



**Victoria University
of Wellington,
New Zealand**

Miloude Lacheheb



**University
of Groningen, the
Netherlands**

Stepan Zaretsky



**Central European
University, Austria**

Felipe Vaca



First places
at Kaggle
competitions

[Link](#)



Intellectual games
winning (What?
Where? When?)

[Link](#)



LOMONOSOV MOSCOW
STATE UNIVERSITY

First place at All-
Russian competition
of infographics

[Link](#)



Winners of HSE
student research
competition

[Link](#)



Winners of different
scholarships (named
after Potanin, Grodsky)

[Link](#)

Winners

Great achievements

Too many stories to share

[Press for more info](#)



Part 6

Our contacts



Website

Our programs websites



Where to find more information?



Landing page



Coursera website



HSE website



HSE website

Press the figures above to follow the link



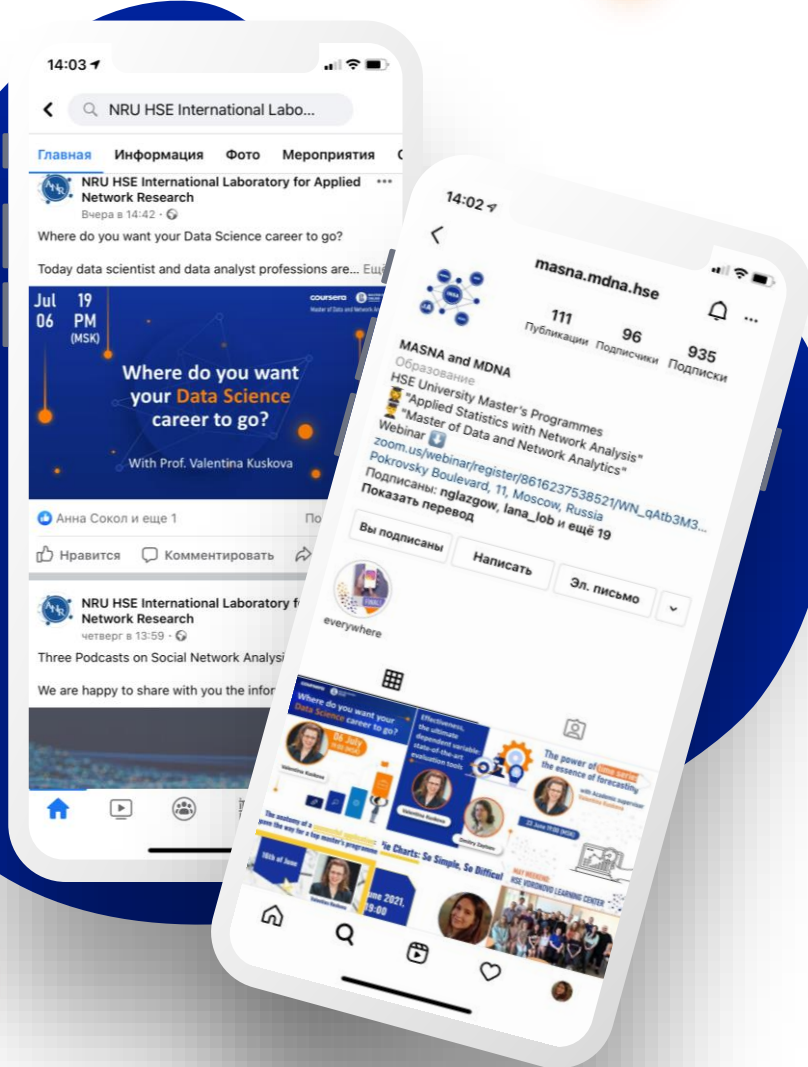
Youtube

Watch the webinars on YouTube channel

Find the recordings of Open Doors events,
listen to what students say about their
education and enjoy the ANR-lab online
seminars

Press for more info





Instagram and Facebook

Be the first one to know the news



Press to follow us on Instagram



Press to follow us on Facebook



Hope to see you among our students



Press the icon above to follow the link