



International Laboratory
for Applied Network Research

Master in Applied Statistics with Network Analysis



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 program.

Here we introduce HSE University and ANR-lab that offers applied mathematics and computer science MASNA master's programme with a focus on applied statistics, data, and network analytics.

Learn more about us



ANR-Lab

Top Russian research
hub of network analytics



Success stories

Learn more about
the students and
graduates



HSE University

Forbes' #1 ranked
Russian university



Education

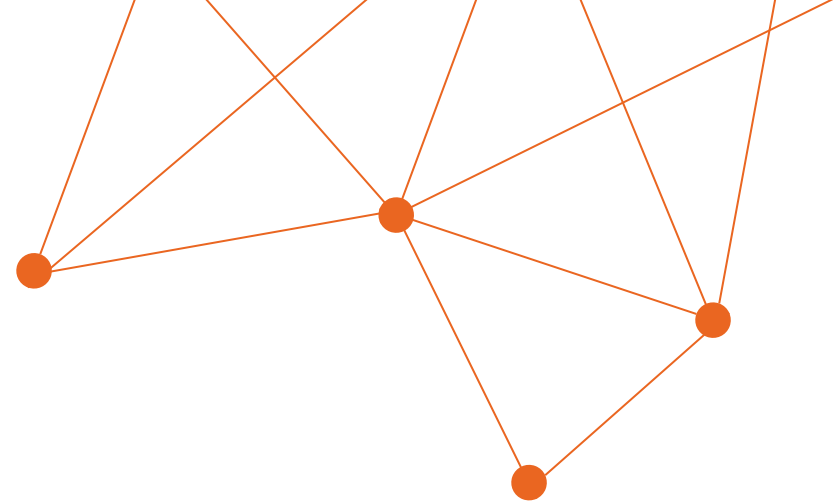
MASNA
programme



Our Contacts

Website, YouTube,
VK, Telegram

Press the circle with number to navigate through the document



Part 1

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 programmes

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





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](#)

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 programme "Applied Statistics with Network Analysis"
- Short educational events in Russia and internationally

Consulting



- Applied consulting (fee-based) for business, governments and NGO
 - Clients: 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

Meet the founders and scientific advisors

Valentina Kuskova



PhD Indiana University

- Former Head of the Laboratory
- Former Deputy First Vice Rector

Stanley Wasserman



PhD Harvard

- Scientific advisor in 2014-2017
- Founder of several programmes 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

Current leadership of the programme

Ivan Klimov



Candidate of Sciences

- Programme Academic Supervisor
- Senior Research Fellow at the laboratory
- Associate Professor, Faculty of Social Sciences

Daria Matlseva



Candidate of Sciences

- Head of the laboratory
- Leading Research Fellow
- Visiting Lecturer



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

Networks in Scientific Communication

Head: Daria Maltseva

Social Capital & Communities

Head: Ivan Klimov

Internet & Media Studies

Head: Sergey Davydov

Data Science & Text Analysis

Head: Ilya Karpov

The background of the slide features a complex, abstract network diagram. It consists of numerous small, dark circular nodes connected by thin, dark lines, creating a dense web of connections. Overlaid on this network are several thicker, dark lines that form a more prominent, geometric structure, possibly representing a specific path or a cluster within the network. The overall color scheme is a warm, muted orange or terracotta, with the network lines and nodes appearing in a darker shade of the same color.

Part 3

Master's Programme Applied Statistics with Network Analysis

MASNA programme offers state-of-the-art analytics with networks

1

APPLIED DATA

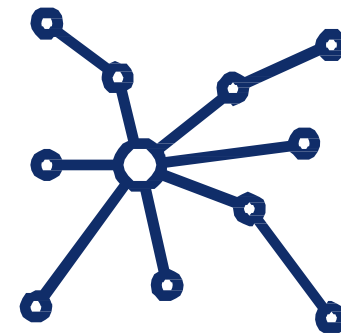


ANALYTICS



2

NETWORK



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



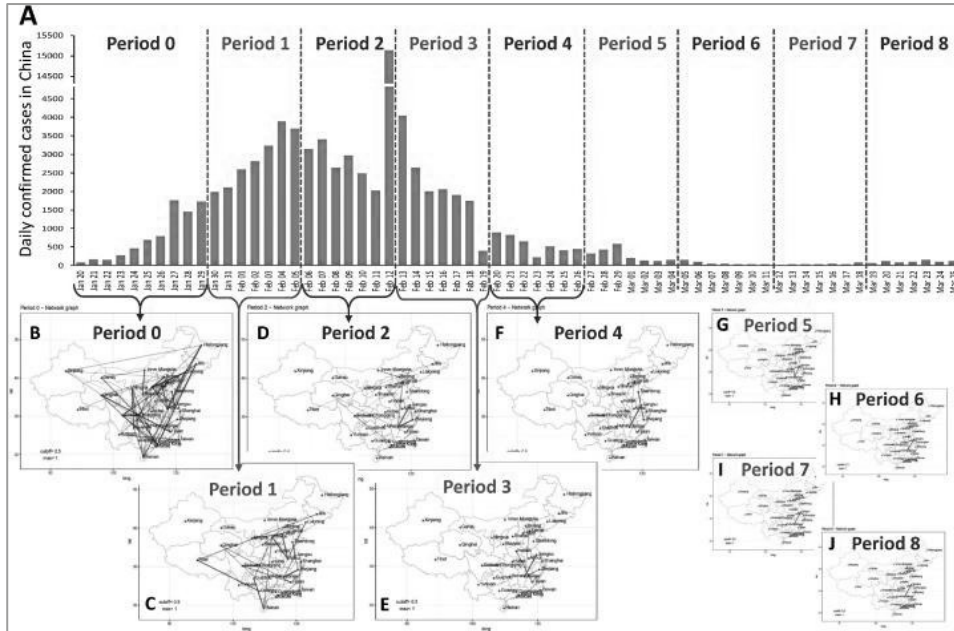
Business professionals



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>

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

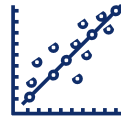
Applied, hands-on approach to master's education in analytics

Skills that markets demand today

Exploratory data analysis



Linear models



Time-series analysis



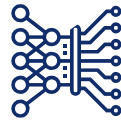
Social network analysis



Machine learning



Neural networks



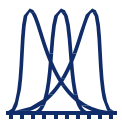
Big data analysis



Data mining



Nonparametric methods



Text and semantic
text analysis



Structural equation
modelling



Multidimensional data
analysis



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

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

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

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

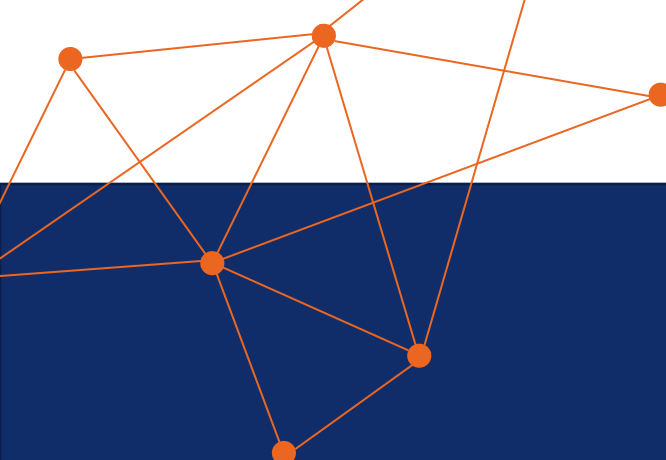
Social Network Analysis

Education component: overall curriculum

- Create your individual study plan from the menu of courses
- Courses and themes are 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



MASNA

Components	MASNA
Name	"Applied statistics with network analysis"
Program aim	Research, mostly academic
Program mission	Training of specialists for the development of interdisciplinary research in a variety of fields of knowledge
Format	Offline
Program focus	Mathematical and methodological approach to data analysis, including the collection of primary data through surveys, scraping, and other methods
Future career	Mostly research (~25% of existing graduates enrolled to PhD programs), most students are interned in research centers (ANR Lab and others)
Final Exam	Master Thesis, Research Article
Study Tracks	Phd Track "Computational Social Sciences"; Business Analytics; Combined (Universal) Track

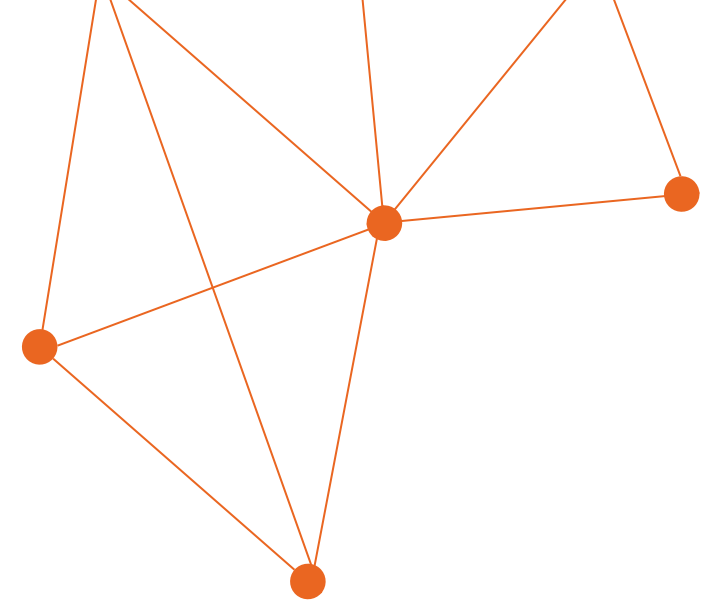


MASNA

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

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

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



Part 4

Success stories



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

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 -

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 -

Our graduates enter top programmes in Europe

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

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

[Press for more info](#)



**The University
of Manchester, UK**

Artem Volgin



**Oxford Internet
Institute, UK**

Liza Chernenko



**University
of Groningen, the
Netherlands**

Stepan Zaretsky



**University
of Bristol, UK**

Ekaterina Melianova



**Victoria University
of Wellington,
New Zealand**

Miloude Lacheheb



**Central European
University, Austria**

Felipe Vaca

kaggle™

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

Great achievements

Too many stories to share



Winners of HSE
student research
competition

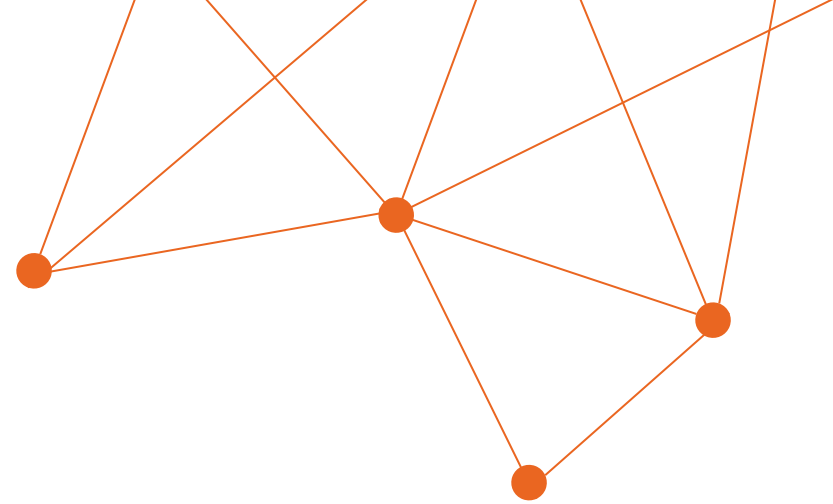
[Link](#)



Winners of different
scholarships (named
after Potanin, Grodsky)

[Link](#)

[Press for more info](#)



Part 5

Our contacts



Our programme websites



Where to find more information?



MASNA

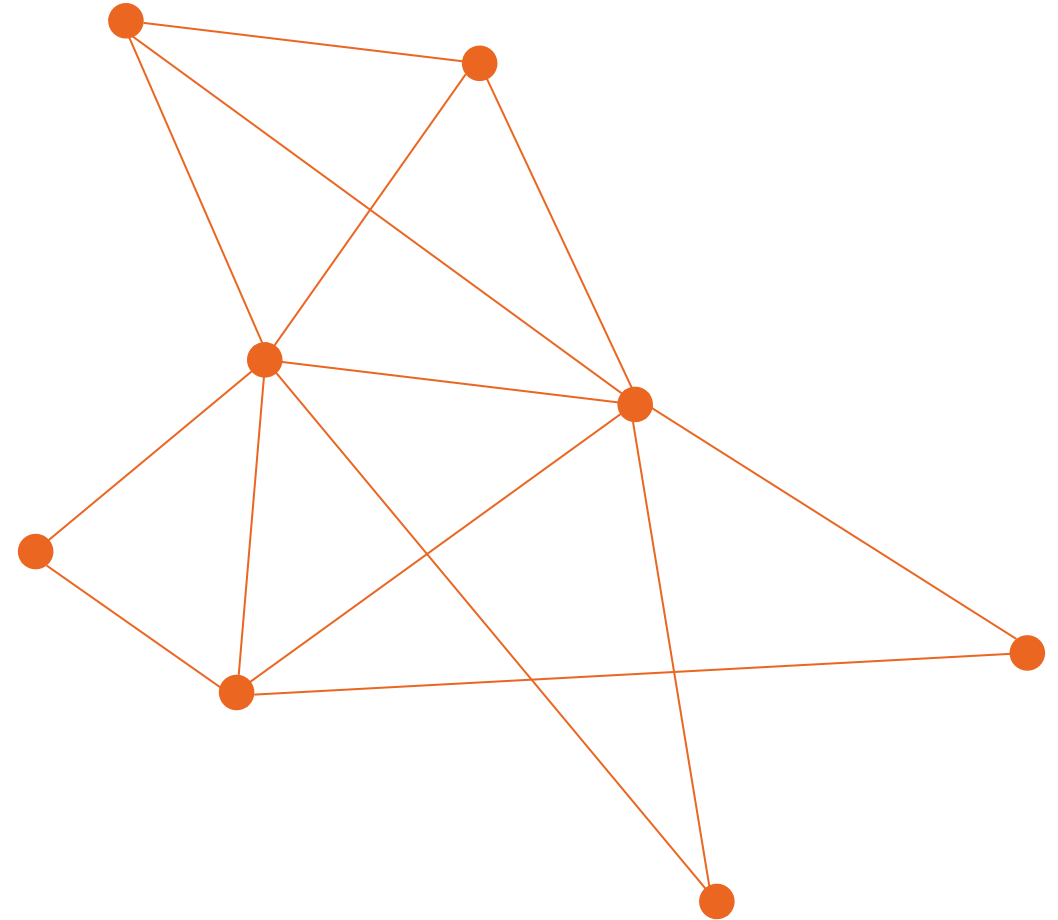
HSE website

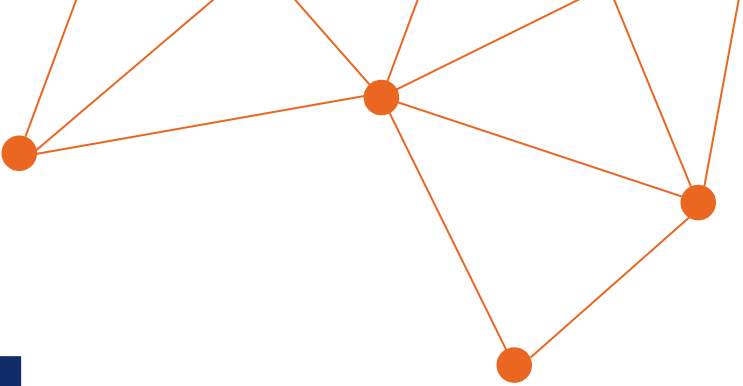


ANR-Lab

HSE website

Press the figures above to follow the link





Watch the webinars on YouTube channel

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

[Press for more info](#)





Be the first one to know the news



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**Hope to see you
among our students**



Press the icon above to follow the link