

CEU NETWORK

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NETWORK & DATA SCIENCE

Sign up for more about our programs and events



→ networkdatascience.ceu.edu

→ dnds@ceu.edu (for PhD)

→ sdsms@ceu.edu (for MSc)

HOW TO APPLY

- Application form
- CV
- Proof of English proficiency
- Letters of recommendation

→ ceu.edu/apply



PROGRAM-SPECIFIC REQUIREMENTS

Master's programs

Bachelor's degree in one of a broad range of disciplines, including computer science, data science, physics, sociology, environmental science, public policy, political science or economics

- Strong interest in interdisciplinary research
- Demonstrated ability to do quantitative studies
- Detailed account of earlier studies
- Statement of purpose

Doctoral programs

Master's degree

FUND YOUR STUDIES

Access to education is one of CEU's core values. It guides us in setting as affordable tuition fees as possible.

Each year CEU offers talented **master's students** generous, merit-based, partial tuition awards and scholarships to help them focus on their studies.

Doctoral scholarships include a full tuition award and a monthly stipend for living expenses.

→ ceu.edu/financialaid



CENTRAL EUROPEAN UNIVERSITY · Quellenstrasse 51 · 1100 Vienna · Austria

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DEPARTMENT OF NETWORK & DATA SCIENCE

How do social networks adapt and evolve over time? How does cooperation arise in networked societies? How do rumors spread online? How can connections help overcome discrimination and exclusion? Obtain the core social data science and network science methods in the topics of applied statistics, machine learning, web mining, network analysis, visualisation, spatial analysis, natural language processing, and many more. How can we detect cartels and corruption in economic networks? How can we identify the key functional regions of our brain by looking at its wiring? Understand and model complex, networked, dynamic, social, economic, political, technological, or ecological systems with a critical reflection on the advantages and dangers of data driven methodologies. How does a pandemic spread through a population, and what can we do to slow it down? How does network structure reflect the socio-economic profile of a population? How do social networks adapt and evolve over time? How does cooperation arise in networked societies? How do rumors spread online? How can connections help overcome discrimination and exclusion? Obtain the core social data science and network science

EARN A DEGREE ACCREDITED IN AUSTRIA AND THE UNITED STATES

PROGRAMS

MS in Social Data Science · 1 or 2 years (depending on the duration of previous undergraduate studies) · full-time

In this program, students learn to collect and analyze social big data to understand the digital world with a socially responsible and critical approach. They study computational social science by combining cutting edge data science tools with approaches of social sciences. The MS SDS program will provide you with the most wanted skills on the data science market including methods of behavioral data collection, machine learning, advanced statistics, data ethics and more. You will have the opportunity to join the professional applied data science tracks for the digital industry or academic specialization tracks including economics, environmental science, political science and policy if you want to enter the world of research. You will complete your training with a real-life capstone project at a data science company or academia.

→ networkdatascience.ceu.edu/msc-social-data-science

PhD in Network Science

This pioneering, research-driven program will introduce you to the theory, methods and data-driven observations and analysis of networks so you can make sense of complex phenomena, which cannot be predicted by the properties of the single units but are rooted in their relational network structure. As the world's first department dedicated to the study of today's ever-growing field of network science, we offer advanced training and challenging coursework on the basic concepts and theories of large-scale networks and hands-on experience in taming massive datasets.

Working across disciplines, you will learn how to measure and predict the dynamics of complex networks – biological, social, physical or technical. You will have the opportunity to focus on a specific field, such as the theory and applications of complex networks in economics, sociology, political science or environmental science, and take part in cross-disciplinary research projects. By the end of your studies, you will develop into an independent researcher who is able to uncover and untangle the patterns of our connected world.

→ networkdatascience.ceu.edu/phd-program-network-science

ELEVATE YOUR RESEARCH

- **Explore big data:** efficient ways to analyze, model and visualize networks with millions of people
- **Understand social processes:** friendships and phone calls, the spread of ideas and the emergence of order from chaos
- **Discover the secrets of success:** how teams innovate, scientists make breakthroughs and entrepreneurs make their first million
- **Uncover hidden webs:** political corruption, terrorist networks, global finance and the wirings of the brain
- **Investigate socio-economic differences:** inequalities, social stratification, segregation in networks, socio-economic status
- **Examine urban networks:** multimodal transportation systems, mobility and sustainability, infrastructural networks and smart cities
- **Master mathematical foundations:** graph theory, dynamic processes and graph limits

SKILLS YOU WILL GAIN

Transferable skills

- Understand & model complex, dynamic, networked systems.
- Manage ethical aspects of collecting & processing personal and big data.
- Have critical & reflexive view on advantages & dangers of data driven methods in real world applications to predict human behavior.
- Research-based communication skills.

Professional skills

- Master top programming language for collection, curation, processing, preparation, & analysis of data.
- Employ data science tools to study & analyse societal & organisational problems of a specific field.
- Combine quantitative & empirical methods from network science with tools to analyze societal & organizational problems.
- Design digital social experiments, execute, measure, & interpret their results.



Internationally renowned faculty and diverse student body



Double accreditation in Austria and the United States



Instruction in English



Small class size and individual mentoring



Internationally distinguished research university