

# CNetS

Center for Complex Networks and Systems Research

## CNetS @ IC2S2

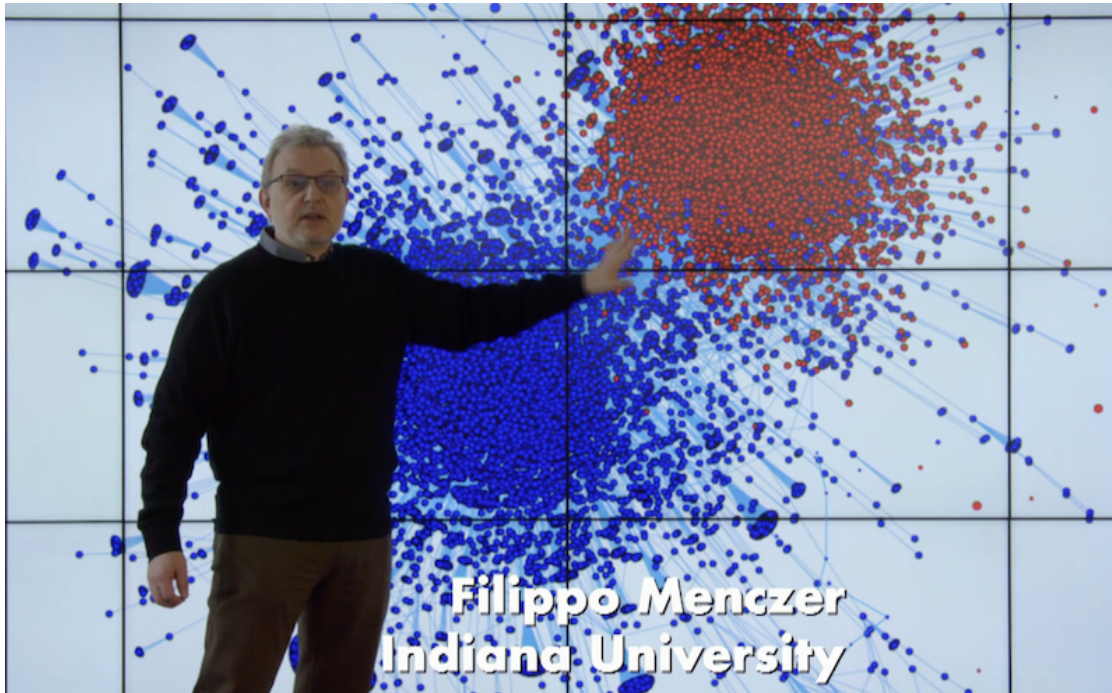
April 30, 2020 Fil, NaN, News



computational social science, papers, poster, talks fil  
CNetS students, postdocs, and faculty members will be presenting 12 papers, 7 posters, and a tutorial on **OSoMe tools** at the **2000 International Conference on Computational Social Science (IC2S2)**, held online this year due to COVID-19. In addition, **Fil Menczer** will deliver one of the **keynotes**.

## CNetS research featured on PBS

March 18, 2020 Fil, NaN, News network science, networks, polarization, social media fil



In the groundbreaking new PBS series “**NetWorld**,” Niall Ferguson visits network theorists, social scientists and data analysts (including at CNetS!) to explore the intersection of social media, technology and the spread of cultural movements. Reviewing classic experiments and cutting-edge research, **NetWorld** demonstrates how human behavior, disruptive technology and profit can energize ideas and communication, ultimately changing the world.

## New textbook from CNetS

February 2, 2020 Fil, NaN, News, Santo book, network science fil



The book *A First Course in Network Science* by CNetS faculty members [Filippo Menczer](#) and [Santo Fortunato](#) and CNetS PhD graduate [Clayton A. Davis](#) was recently published by [Cambridge University Press](#). This textbook introduces the basics of network science for a wide range of job sectors from management to marketing, from biology to engineering, and from neuroscience to the social sciences. Extensive tutorials, datasets, and homework problems provide plenty of hands-on practice. The book has been endorsed as “Rigorous” (Alessandro Vespignani),

“comprehensive... indispensable” (Olaf Sporns), “with remarkable clarity and insight” (Brian Uzzi), “accessible” (Albert-László Barabási), “amazing... extraordinary” (Alex Arenas), and “sophisticated yet introductory... an excellent introduction that is also eminently practical” (Stephen Borgatti). It was ranked by [Amazon](#) #1 among new releases in physics. [More...](#)

## CNetS organizing Summer Institute in Network Science

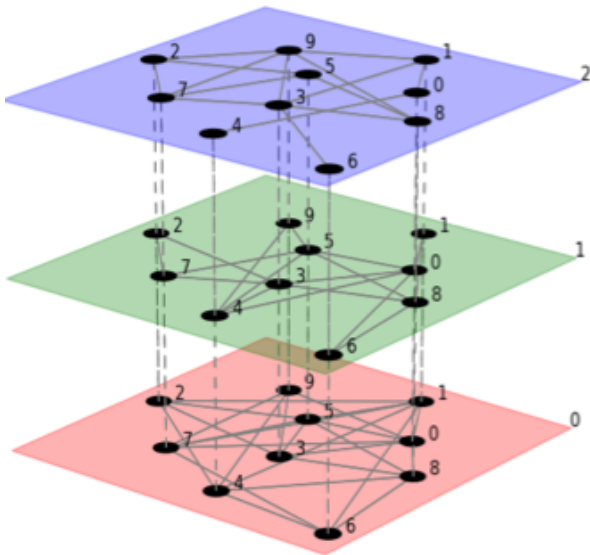
November 23, 2019 News network science, school santo

The Indiana University Network Science Institute ([IUNI](#)), jointly with the Network Science Institute at Northeastern University ([NetSI](#)) are organizing [SINSA 2020](#), the first Summer Institute in Network Science and its Applications, a two-weeks long school divided into eight teaching modules on major topics of network science, with top instructors, intended for graduate students, practitioners and early-career researchers. [Santo Fortunato](#), CNetS member and IUNI Director, is one of the two chairs of this event, as well as instructor of the module *Network Structures*. SINSA 2020 will be held in Boston, from June 22 till July 3, 2020. Send your students to this great event!

## CNetS leading first international exchange program in network science

October 2, 2019 News collaborative, network science santo

The National Science Foundation has awarded a \$1.9 million grant through the new [AccelNet](#) program to the [Indiana University Network Science](#)



*Schematic example of multilayer network*

Institute (IUNI), to build an international exchange program focused on multilayer networks. **Santo Fortunato**, CNetS member and IUNI Director, is the PI of this award, jointly with **Alessandro Vespignani**, representing the **Northeastern University Network Science Institute (NetSI)**. The project, **AccelNet-MultiNet**, will establish strong collaborations with scientists of four European institutions: the **University of Barcelona** in Spain, the **ISI Foundation** in Turin, Italy, the **Central European University** in Budapest/Vienna, and the **CNRS** in Marseille, France. Over the course of five years, 20 researchers from IU and Northeastern University, mostly graduate students, will spend a semester in one of the partner institutions in Europe, and 20 researchers from those institutions will do the same in the U.S. They will work on projects of common interest within the scope of multilayer network science. [Read more ...](#)



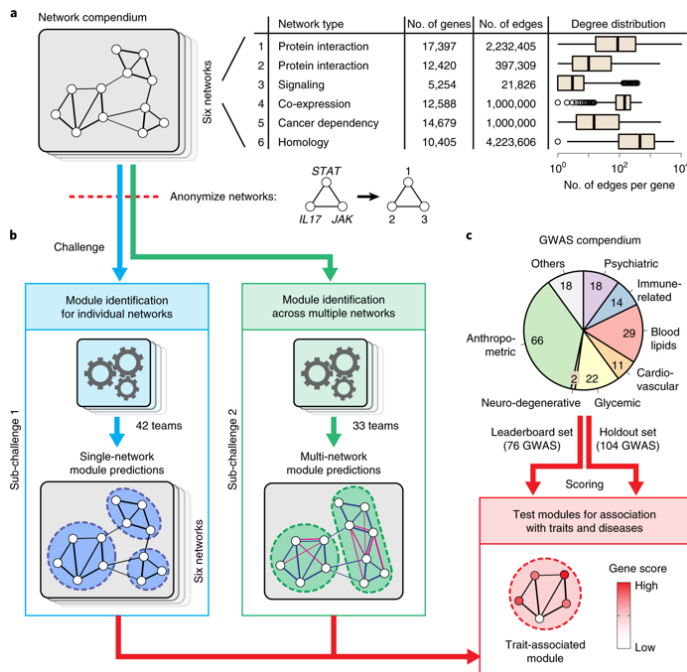
## CNetS faculty organizing Networks 2021

September 20, 2019 News conferences, network science santo  
 The Indiana University Network Science Institute (IUNI) will be the main organizer of **Networks 2021**, the largest ever conference in the science of networks. This historical event will be hosted at the **Hyatt Regency Washington in Capitol Hill**, in Washington DC, on July 6-11, 2021. It will combine the annual meeting of the **International Network for Social Network Analysis (Sunbelt XLI)**, and the annual meeting of the **Network Science Society (NetSci 2021)**. CNetS faculty **Santo Fortunato** will be one of the two chairs of the conference. Other CNetS faculty will be also actively involved in the organization. Save the date for this great event!



# DREAM Challenge paper published in Nature Methods

August 31, 2019 News, Santo community detection, genetic networks santo



The outcome of the **DREAM Challenge on Disease Module Identification** in genetic networks has been reported in a **paper** published in **Nature Methods**. Over 400 participants from all around the world have contributed 75 different clustering algorithms to predict disease-relevant modules in diverse gene and protein networks. Participants could only use unsupervised clustering algorithms, which rely exclusively on the network structure and do not depend on additional biological information such as known disease genes. CNetS professor **Santo Fortunato** and former postdoc **Lucas Jeub** participated in the analysis of the results delivered by the algorithms.

*Structure of the Disease Module Identification DREAM Challenge*



## New \$6 million center will investigate media and technology in society

August 15, 2019   Fil, NaN, News   bots, fake news, funding, media, misinformation, social media   fil

Indiana University will establish a \$6 million research center to study the role of media and technology in society. With leadership by CNetS faculty, the [Observatory on Social Media](#) will investigate how information and misinformation spread online. It will also provide students, journalists and citizens with resources, data and training to identify and counter attempts to intentionally manipulate public opinion. Major support for the center comes from the [John S. and James L. Knight Foundation](#), which will contribute \$3 million, as well as funds from the university. The center is a collaboration between the IU [School of Informatics, Computing and Engineering](#), The [Media School](#) and the [IU Network Science Institute](#). [More...](#)



## CNetS researchers map global economy

August 2, 2019   News   complex networks, computational social science, Network Analysis, network science, networks, papers   fil

A team of CNetS researchers has created the first global map of labor flow in collaboration with the world's largest professional social network, LinkedIn. The work is [reported in the journal \*Nature Communications\*](#). The study's lead authors are Jaehyuk Park and Ian Wood, PhD students working with [YY Ahn](#). Wood is currently a software engineer at LinkedIn. Other authors on the study are CNetS PhD student Elise Jing; Azadeh Nematzadeh of S&P Global, who contributed to the study as a CNetS PhD student; Souvik Ghosh of LinkedIn; and Michael Conover, a CNetS PhD graduate and senior data scientist at LinkedIn at the time of the study. CNetS researchers created the map using LinkedIn's data on 500 million people between 1990 and 2015, including about 130 million job transitions between more than 4 million companies. The researchers gained access to this data as one of only two teams — IU and MIT — selected to continue their work on the [LinkedIn Economic Graph Research program](#) beyond 2017. The study's result represents a powerful tool for understanding the flow of people between industries and regions in the U.S. and beyond. It could also help policymakers better understand how to address critical skill gaps in the labor market or connect workers with new opportunities in nearby communities. [More...](#)

## CNetS faculty lead two prestigious DoD Minerva projects on the science of

# science

July 31, 2019 News, Santo citation network, collaboration network, deep learning, excellence, funding, graph embedding, impact, neural networks, novelty, science of science santo



Two CNetS teams were awarded prestigious awards from [Minerva](#), a research initiative of the Department of Defense that supports basic social science research focusing on topics of particular relevance to U.S. national security. One of the two awards will develop *Science Genome*, a new quantitative framework to investigate science of science using representation learning and graph embedding. The \$4.4M project will take advantage of the availability of digitized bibliographic data sets and powerful computational methods, such as machine learning with deep neural networks, to tap into hidden information present in complex scholarly graphs. The project is led by [YY Ahn](#) and also includes [Staća Milojević](#), [Alessandro Flammini](#), and [Fil Menczer](#) ([more...](#)). The other award aims to understand the fundamental laws ruling science dynamics: the description and prediction of the evolution of scientific fields, how to define and measure the novelty of a scientific work, how to assemble successful teams to solve a specific task, and how to define and measure the impact of scholars' research. The \$5M project is led by a consortium of seven prominent [science of science](#) experts in four US institutions, including CNetS professor [Santo Fortunato](#) ([more...](#)). Both projects have potential applications in policy-making, for institutions and funding agencies.

FULFILLING the PROMISE

Copyright © 2018 The Trustees of [Indiana University](#) | [Privacy Notice](#) | [Accessibility Help](#)