Complex Networks and Systems

Our complex networks and systems program draws on world-class faculty in a distinctly multi-disciplinary environment. Our researchers are experts in network science, data science, computation, computational biology, statistical physics, cognitive science, and information science; they study multi-scale systems that extend across social, informational, technological, infrastructural, and biological levels. The School of Informatics, Computing, and Engineering works in close collaboration with the Indiana University Network Science Institute.

Our students come from around the world and a variety of educational backgrounds. They share a strong desire to widen their theoretical, computational, modeling, data analytics, and technical skills.

Our graduates find great jobs in a broad range of companies and research institutions including Amazon, Berkeley Lab, Eli Lilly, Facebook, Google, IBM, LinkedIn, MIT, Microsoft, Northeastern University, Oak Ridge National Laboratory, Philips Research, Samsung Research America, Santa Fe Institute, and the Sorbonne.
Faculty and Research Areas

Biological and Cognitive Systems
Explore neural network structure and dynamics, and study how complex behaviors emerge from the interactions between brain, body, and environment.

Networks
Work with some of the world’s leading experts to unravel the community structure, robustness, multi-layer architecture, functions, and processes of complex networks.

Computational Social Science
Investigate the diffusion of information and misinformation in social media, and use large-scale computational models and big data analytics to study social and cultural phenomena.

Science of Science
Analyze massive datasets of scientific output to quantify impact, model citation and collaboration dynamics, and predict emerging trends.
The complex systems Ph.D. program was particularly active, supportive, and interdisciplinary. I was able to pursue my interests in complexity and its relation to biology, cognitive science, and neuroscience.” — Artemy Kolchinsky, Ph.D. ’14

“The professors and staff opened my eyes to learning and perspectives that I didn’t know existed. I feel incredibly lucky to be a part of the CNetS family!” — Jasleen Kaur, Ph.D. ’14

“I couldn’t believe it when I saw our research on the front cover of The Wall Street Journal. The world pays attention to what happens at CNetS.” — Michael Conover, Ph.D. ’12

“The interesting research topics that I got to work on and the smart people whom I was lucky enough to work with gave me with the courage and passion to travel through my Ph.D. journey.” — Lilian Weng, Ph.D. ’14

Life in Bloomington, Indiana

A thriving live music scene, coffeehouses, farmers markets, festivals, eclectic restaurants, and picturesque scenery are just part of what makes Bloomington the cultural center of Indiana.

The home of the southernmost campus in the Big Ten, Bloomington is the quintessential college town—active, intellectual, inclusive, friendly, relaxed, and safe. Our small city has a population of more than 80,000 residents and 46,000 IU students, with cultural resources and opportunities that rival cities many times its size. All of this is affordable thanks to our low cost of living. Bloomington also is bike friendly—there are more than 200 miles of biking and running trails—and it is easy to navigate with free campus and city bus service provided to IU students.

The stunning autumn views, the storybook town square, the limestone architecture, and the perfect blend of tradition with modern living has routinely landed the IU campus and Bloomington on lists of the most beautiful college towns in America.