

Peter Mucha, Ph.D.

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Mucha's current research focuses on the mathematical and computational study of networks, developing tools for the study of real-world data.

Mucha is a professor in the department of mathematics and the department of applied physical sciences. He is the former chair of both departments. Mucha's research group embraces an interdisciplinary approach to data science focused on networks and network representations. He uses mathematical models and statistical principles to develop and apply computational tools for the study of real-world data, working in close collaboration with domain science experts. Most people are familiar with the concept of a network in terms of hyperlinked web pages or online social networks (e.g. Facebook). Such online networks are an area of broad interest, but networks are also useful for studying a wide variety of connected systems. With "nodes" representing actors of interest and "edges" connecting the nodes representing the relationships under study, the concept of a network can be flexibly used in many applications and across many academic disciplines. He and his students have applied network analysis to the topics of sports, politics and even Facebook.

Data Science, Networks, Complex Systems, Interacting Particle Systems, Developing and understanding tools for the study of real-world data

UNC Department of Mathematics, UNC Department of Applied Physical Sciences , Carolina Center for Interdisciplinary Applied Mathematics, Social Network Analysis at Carolina, Duke Network Analysis Center

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Princeton University

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B.S. Engineering Physics

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