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TRIPODS Phase II: Institute for Data, Econometrics, Algorithms, and Learning (IDEAL)

Thursday 27 October 2022 10:10 (1 hour)

Our institute is a multi-institution and transdisciplinary collaborative Phase II Institute for Data, Econometrics, Algorithms, and Learning (IDEAL), which focuses on key aspects of the foundations of data science. IDEAL will consolidate and amplify research devoted to the foundations of data science across all the major research-focused educational institutions in the greater Chicago area: University of Illinois at Chicago (UIC), Northwestern University (NU), Toyota Technological Institute at Chicago (TTIC), University of Chicago (UC), and Illinois Institute of Technology (IIT). Our team involves 55 faculty working on the foundations of data science from all the core TRIPODS disciplines of computer science, electrical engineering, mathematics, statistics, and related fields like economics, operations research, optimization, and law. Additionally, the team includes a group of 9 Google researchers, who add to our technical strength and provide a direct connection to industry.

In Phase II, IDEAL's research goals center around three main thrusts –Foundations of Machine Learning, High-dimensional Data Analysis and Inference, and Data Science and Society. Specific topics include foundations of deep learning, reinforcement learning, ML and logic, network inference, high-dimensional data analysis, trustworthiness & reliability, fairness, and data science with strategic agents. The research activities are designed to facilitate collaboration between the different disciplines and across the five Chicago-area institutions, and they build on the extensive experience from our Phase I institutes. The activities include topical special programs, postdoctoral fellows, co-mentored PhD students, workshops, coordinated graduate courses, visiting fellows, research meetings, and brainstorming sessions.

Research

Education and Outreach

Data & Cyberinfrastructure

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