Science of Science and Innovation Approaches for Computational Social Sciences

Abstract

The explosion of big data in recent years, driven by rapid advances in science and technology, provides unprecedented opportunities for us to quantitatively understand social and economic systems using a wide range of methodologies in computing, networks, and analytics. Dr. Gao Jian will share several examples to illustrate how big-data analytical tools and the science of science and innovation approaches can help advance computational social science research. He will first introduce measurement frameworks for estimating the benefit of artificial intelligence (AI) for scientific research based on millions of papers and patents. After illustrating a prosperous future of AI for science, Dr. Gao will show the systemic misalignment with AI education in the current university curriculum, the broad utilization of scientific research by public policy decision-making, and the important implications of promoting an equitable and sustainable research workforce. Through these examples, Dr. Gao hope to illustrate how interdisciplinary, mixed-methods approaches that combine large-scale datasets, computational tools, population surveys, and social science theories can help us better understand fundamental dynamics and interactions in complex social systems.