Abhishek Ray, PhD

Assistant Professor, School of Business

Education

PhD, Management Information Systems, Purdue University

Key Interests

Computational Social Choice | Decentralized Digital Economy | Blockchain and Cryptocurrencies | Artificial Intelligence | Economics of Emergent Technologies

CONTACT

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SELECT PUBLICATIONS

❯ A. Ray. and M. Ventresca. An ant colony approach for the winner determination problem. In: Liefooghe A., López-Ibáñez M. (eds) *Evolutionary Computation in Combinatorial Optimization.* EvoCOP 2018. Lecture Notes in Computer Science, 10782. Springer, Cham. (2018).

❯ A. Ray *et al.*, Ad-blockers, advertisers, and internet: the economic implications of ad-blocker platforms. *Proceedings of the International Conference on Information Systems, Seoul, South Korea.* (2017).

Research Focus

Investigating the impact of technology on people, businesses and institutions has been an active area of research in Information Systems. As technology develops from an enabler to a strategic asset, the increase in variety of such research problems has been inevitable. The nature of these research questions often requires an interdisciplinary approach. This change in approach for me is an opportunity for delving deeper into problems and uncovering deeper insights. This has been the overarching goal of my research. I am interested in research at the intersection of Economics, Computational Sciences and Information Systems. The three major objectives of my research are concerned with enhancing policymaking and improving outcomes and predictions where business, technology and social welfare issues interact. Accordingly, I have focused on solving problems that need one or more of these objectives to be achieved.

Current Projects

■ Incentivizing Honest Mining in Bitcoin Mining Pools: A Mechanism Design Approach - I study the problem of designing incentive compatible reward mechanisms for mining pools. The mining pool industry is worth $4.8 billion and finding a solution to fair and incentive compatible reward functions is in great demand. I provide a dominant strategy incentive compatible reward function that demonstrates ability to make honest mining dominant and any attack on mining pools a dominated strategy.

■ Decision Making on Observational Studies: A Robust Approach - this is a paper directly related to data and causality problems in Big Tech companies. Briefly, we look at the AI technique of Bayesian Networks and answer a simple question: how do I make causal decision-making simpler when experimentation is costly?