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Adversarial Risk Analysis

Wednesday, April 26, 2023

11:50 AM

110 Frelinghuysen Road, Hill Center, Room 552

Zoom Meeting: Meeting ID: 99075124232

Password: 952486

<https://rutgers.zoom.us/j/99075124232?pwd=UDdPVjRncXZFcXpvaFE0OWJyMVdSUT09>

Light refreshments will be served

Abstract:

Adversarial Risk Analysis (ARA) is a decision-theoretic alternative to game theory, applicable to corporate competition, auctions, and counterterrorism. In ARA, one builds a model for the strategic decision making of one's opponent(s), and then places subjective Bayesian distributions over unknown quantities. This structure enables the analyst to compartmentalize distinct kinds of uncertainty. Within this framework one can use standard Bayesian techniques to develop a probability distribution over the actions of the opponent. Given this distribution, the decision theorist chooses the action that maximizes expected utility.

Bio:

David Banks obtained a Ph.D. in Statistics in 1984. He won an NSF Postdoctoral Research Fellowship in the Mathematical Sciences, which he took at Berkeley, working with David Blackwell. In 1986 he was a visiting assistant lecturer at the University of Cambridge, and then joined the Department of Statistics at Carnegie Mellon in 1987. In 1997 he went to the National Institute of Standards and Technology, then served as Chief Statistician of the U.S. Department of Transportation, and finally joined the U.S. Food and Drug Administration in 2002. In 2003, he returned to academics at Duke University.

He was the coordinating editor of the Journal of the American Statistical Association. He co-founded the journal Statistics and Public Policy and served as its editor. He co-founded the American Statistical Association's Section on National Defense and Homeland Security, and has chaired that section, as well as the sections on Risk Analysis and on Statistical Learning and Data Mining. David Banks is past-president of the Classification Society and of the International Society for Business and Industrial Statistics. He has twice served on the Board of Directors of the American Statistical Association. He is a fellow of the American Statistical Association, of the Institute of Mathematical Statistics, and of the American Association for the Advancement of Science. He won the American Statistical Association's Founders Award, the De Groot Award, and gave the William Sealy Gosset and Deming lectures. From January 2018 to Sept., 2021, he was the director of SAMSI. His research areas include models for computational advertising, dynamic text networks, adversarial risk analysis (i.e., Bayesian behavioral game theory), human rights statistics, agent-based models, forensics, and certain topics in high-dimensional data analysis.

