Tyler Porter
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Education

Ph.D.	Economics, Cornell University, 2015-2021
M.A.	Economics, Cornell University, 2018
B.A.	Mathematics and Economics, Kent State University, 2015, Summa Cum Laude

Employment

Amherst College Visiting Assistant Professor of Economics, 2021-2023

Fields of Specialization

Primary: Game Theory, Mathematical and Computational Economics
Secondary: Industrial Organization, Networks

Working Papers

"On the Characteristics and Verification of Tenable Strategy Sets in Bimatrix Games"

Abstract: I consider the robust set-valued equilibrium concepts coarse tenability and fine tenability introduced by Myerson and Weibull. I show how their framework of consideration-set games maps onto the more familiar framework of strategy perturbations. This allows me to compare these set-valued concepts to other objects from the equilibrium refinement literature, as well as provide methods to verify whether strategy sets satisfy these robustness properties in bimatrix games. I provide complexity results for the verification of fine tenability and show how the methods developed for verifying this concept can be applied to proper equilibria.

"Monitoring in Selfish Routing Games"

Abstract: I consider a model of nonatomic selfish routing with agents of different types and a network operator. In particular, I suppose that some fixed fraction of the commuters are either in violation of a traffic contract or are unwanted by the network operator, who in turn has the ability and authority to impose additional costs via fines on these types of agents. This model is motivated by several situations that arise in transportation systems. The primary applications are in fare evasion in public transportation networks, the location of mobile weigh stations for the monitoring of freight transportation, and the location of law-enforcement for traffic violations. In this paper, I characterize properties of equilibria in terms of the potential externalities that can arise as a result of the inclusion of fines in the presence of heterogeneous agents. A discussion of the network topologies in which the inclusion of a revenue maximizing network operator cannot harm those not subject to fines at an equilibrium follows.

"Contracting for Attention Intermediaries"

Abstract: I develop a tractable parametric model of competition among attention intermediaries that design simple limited liability contracts to incentivize the production of high-quality content on their platform in the face of moral hazard. I use an attention-based model of consumer viewership in which advertising takes a distortionary form. Each platform serves as an intermediary between content and consumers. The focus of the analysis is on the effects of exclusivity on consumer welfare.

Work in Progress (Draft not available)

"On the Computation of Game Theoretic Solutions: Applications of the Positivstellensätze"
Abstract: This project considers a number of solution concepts in game theory that can either be expressed as semialgebraic sets or in which verification requires checking non-emptiness of a semialgebraic set. I aim to use semidefinite programming relaxations (a now common approach to many related problems) to determine whether these methods prove useful in the computation of equilibrium refinements, as well as whether the specific structure of a refinement can be exploited to improve the optimization.

"Multi-Round Contests with Incentive Provision" (Joint work with Alesandro Arcuri)
Abstract: We consider a model of multi-battle team contests in which competing principals provide incentives to their respective players in order to improve their probability of winning. The framework allows for an analysis using the literature available on winner-pay contests. We characterize equilibrium contracts in the case of moral hazard and limited liability.

"Contracts and Disagreement: A Boolean Approach"
Abstract: This project analyzes the problem of investment and information acquisition in an environment where each agent's payoffs are determined by a state of the world represented by a boolean formula. Agents sequentially test variables to determine the likelihood that the realized state is a satisfying assignment of their formula. I consider how each player's collection of satisfying assignments relates to the probability that both players eventually invest, as well as how the agreed upon sequence of tests differs depending on disclosure requirements.

Teaching Experience:

Amherst College

Instructor, ECON 224: Introduction to Economic Networks; Fall 2021, Spring 2022, Fall 2022, Spring 2023
Instructor, ECON 111: An Introduction to Economics; Fall 2021, Spring 2022, Fall 2022, Spring 2023
Instructor, ECON 290: Special Topics in Behavioral Economics; Spring 2023

Cornell University

TA, ECON 6110: Microeconomic Theory 3; Spring 2021
TA, ECON 6170: Intermediate Mathematical Economics 1; Fall 2020
TA, ECON 1110: Introductory Microeconomics; Fall 2016, Spring 2017, Winter 2019, Summer 2019
TA, ECON 3801: Introduction to Game Theory and Strategic Thinking; Fall 2017
Instructor, MATH 1110: Calculus 1; Fall 2018
TA, MATH 2130: Calculus 3; Spring 2018, Spring 2019
TA, MATH 3110: Introduction to Analysis; Fall 2017
TA, AEM 1200: Introduction to Business Management; Summer 2019, Summer 2020

Awards and Honors

Howard and Abby Milstein Graduate Teaching Assistantship (Fall 2020)
Ernest Liu Family Outstanding Teaching Award (Fall 2019)
Sage Fellowship, Cornell University (2015-2016), (2019-2020)
Phi Beta Kappa
University Honors, Kent State University (2015)
Undergraduate Honors Thesis Fellowship (2014)

Programming/Computational Tools

Matlab/Octave, SAS, Stata, Python, LaTeX

References (Research)

Prof. David Easley	Cornell University	dae3@cornell.edu
Prof. Eva Tardos	Cornell University	eva.tardos@cornell.edu
Prof. Lawrence Blume	Cornell University	lblume@cornell.edu
Prof. Tommaso Denti	Cornell University	tjd237@cornell.edu

References (Teaching)

Prof. Daniel Barbezat	Amherst College	dpbarbezat@amherst.edu