

Irfan Khan

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Citizenship and Visa Status

U.S. Citizen

Education

Ph.D. Economics, The Ohio State University, 2027 (expected)
Dissertation: "Essays in Psychology and Economics"
Committee: Paul Healy (chair), Yaron Azrieli, Ian Krajbich, Collin Raymond
M.A. Economics, Boston University, 2018
B.A. Economics, University of Rochester, 2016
B.S. Mathematics, University of Rochester, 2016

Teaching and Research Fields

Primary fields: Microeconomic Theory, Experimental Economics
Secondary fields: Psychology and Economics

Research Papers

"100 or 20 Shades of Gray: A Theory of Discretization" with Ian Krajbich (**Job Market Paper**)

We study the granularity with which decision makers categorize a continuous state space to represent their environment. Decision makers commit to a category structure over the state space in response to their prior beliefs, decision stakes, and information costs. This partition captures the precision with which the decision maker perceives the world, trading off the benefit of a finer representation with the costs of attention. Under a broad class of cost functions we show that there exists a discrete representation of the environment, adjusting in representation to the underlying primitives. We test these properties in a perceptual matching task where subjects map shades of gray onto a numerical scale. The data reveals a wedge between precision and accuracy: environments that induce finer categorization lead subjects to use the scale more uniformly, without the assumed benefit of improved accuracy. More broadly, our framework organizes empirical patterns: behavioral amplification and attenuation, binned responses, rounding, and left-digit bias.

"Measuring Consideration: The Attentional Origins of Stochastic Choice" with Ian Krajbich, Collin Raymond, Savitar Sundaresan, and Andre Veiga

Randomness in choice can be attributed to many potential mechanisms, including shocks to utility and attention. In a gaze-contingent lottery experiment, we observe attention and choice jointly and provide reduced-form facts that discriminate between these mechanisms. We measure choice reversals and first-order stochastic dominance violations, as well as two margins of attention — extensive (whether an option is seen) and intensive (how long it is examined). Choice 'randomness' is a nearly deterministic function of attention: from the gaze record alone we predict the chosen option in 93% of within-person choice reversals (against a benchmark of 50%), and classify dominated from dominating choices in 95% of repetitions (against a benchmark of 85%). We further show that the extensive margin of attention accounts for well under half of each behavior; behaviors around choice reversals (but not around dominance violations) change at certain gaze thresholds (≈ 0.3 seconds and

0.5 seconds); and attention does not reliably screen out dominated options. Moreover, the relationships between attention and both reversals and dominance violations change depending on menu size, but controlling for extensive attention eliminates menu-size effects in reversals while only slightly attenuating them for FOSD violations.

Research in Progress

“The Illusion of Learning: Belief Formation and Misperception in Games with Partial Feedback”
with Sungmin Park

We study how misperceptions arise and persist in extensive-form games under partial feedback. In our model of a metagame, there is a large population of agents from which groups of agents are randomly matched in each period to play an extensive-form game. After each period, only coarse aggregate statistics about game outcomes are revealed to the population. We show that players’ beliefs and strategies in the metagame converge to an observation-consistent equilibrium (OE) of the underlying game. We test the implications of the model in a laboratory environment using a simplified poker game.

Conference and Seminar Presentations

2026	North American Meetings of the Economic Science Association, Charlottesville, VA (scheduled)
2026	BEEMA10, State College, PA
2026	World Meetings of the Economic Science Association, Los Angeles, CA
2026	Midwest International Trade & Theory Conference, Columbus, OH
2026	OSU Sports Analytics Conference, Columbus, OH
2025	Society for Neuroeconomics, Boston, MA
2025	North American Meetings of the Economic Science Association, Tucson, AZ
2025	MathPsych/ICCM, Columbus, OH
2025	WEAI 100th Conference, San Francisco, CA
2024	North American Meetings of the Economic Science Association, Columbus, OH
2024	World Meetings of the Economic Science Association, Bogotá, Colombia
2024	Midwest Economic Theory Conference, Rochester, NY
2023	North American Meetings of the Economic Science Association, Charlotte, NC

Research Experience and Other Employment

Summer 2026	The Ohio State University, Research Assistant to John Rehbeck
2024–2025	The Ohio State University, Research Assistant to John Kagel
2021	Georgia Military College, Adjunct Professor
2019–2020	Los Angeles Behavioral Economics Lab, University of Southern California, Visiting Research Scholar

Professional Activities

Referee for: Journal of Economic Behavior and Organization

Honors, Scholarships, and Fellowships

2026–2028	Taiwan National Science and Technology Council (NSTC) Grant,
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2023, 2024	NT\$2,746,000 (approx. US\$86,700; PI: Sungmin Park) Departmental Citation for Excellence in Teaching, The Ohio State University
2023	Journal of Money, Credit and Banking Research Grant (\$2,500) Decision Sciences Collaborative Pilot Grant, The Ohio State University (\$2,700)
2021–2022	University Fellowship, The Ohio State University
2015–2016	Take Five Scholar, University of Rochester

Teaching Experience

Fall 2026	Experimental Economics (ECON 4050H), The Ohio State University, teaching assistant
Summer 2023	Principles of Microeconomics (ECON 2001.01), The Ohio State University, instructor of record
Fall 2022–Spring 2024	Principles of Microeconomics (ECON 2001.01), The Ohio State University, teaching assistant
Winter & Summer 2021	Microeconomics (ECO 202), Georgia Military College, instructor of record
Spring 2016	Behavioral Economics (ECO 271), University of Rochester, teaching assistant

References

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