RURU (JUAN RU) HOONG

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EDUCATION

Harvard University, Department of Economics and Harvard Business School — **Cambridge, MA**
PhD Candidate in Business Economics — *2020 – Present*

- Fifth-year candidate researching digital economics, AI, privacy and social media; fields in labour and behavioural economics
- Dissertation committee: Jesse Shapiro (chair), Katie Coffman, Shane Greenstein, David Yang

Stanford University — **Stanford, CA**
B.A. Economics with Honours and Distinction [GPA: 4.05/4] [GRE: Q: 169, V: 167, W: 5.5] — *2015 –2019*

- Phi Beta Kappa (elected as a junior)
- Firestone Medal for "The Behavioural Economics of Social Media" (awarded to top 10% of theses university-wide)
- Study abroad: Stanford in Oxford (April – June 2017) and Stanford in Washington (April – June 2018)

St Joseph's Institution International — **Singapore, Singapore**
International Baccalaureate Diploma [45/45] — *2010 –2014*

- Awarded Principal's Award, Economics & Theory of Knowledge Award, SJII Scholarship, Cambridge Top in World for Intl Mathematics

PUBLISHED PAPERS

Self Control and Smartphone Use: An Experimental Study of Soft Commitment Devices — *Nov 2021*
European Economic Review, Vol 140

WORKING PAPERS

From 0 to 1: Calibrated Coarsening in Human-AI Collaboration, Theory and Evidence, *with Bnaya Dreyfuss*

Commitment at Scale: Evidence from a RCT with >10 Million Social Media Users, *with Peter Hickman and Yulu Tang*

Equitable Resource Allocation in AI-Driven Education, *with Hyunbin Loh, Yejin Han, Chanyou Hwang, and Younghoan Cho*

WORKS-IN-PROGRESS

Organisational Design in the Face of AI Complexity: Evidence from AI Data Annotation

Healthy Youth Smartphone Use: Evidence from a Large-scale Experiment, *with Luca Bragheiri, Sarah Eichmeyer and Matthew Gentzkow*

Privacy Preferences around the World, *with Andrew Kao and David Yang*

CASE STUDIES

Riiid: Scaling AI Educational Services Globally, *Harvard Business School Case 324-030*, *with John Jong-Hyun Kim and Nancy Dai*

WORK EXPERIENCE

Harvard Department of Economics – *Teaching Fellow* — **Cambridge, MA** *2022 – Present*

Harvard University – *Resident Tutor/Advisor, Eliot House* — **Cambridge, MA** *2022 – 2023*

Boston Consulting Group – *Associate* — **London, United Kingdom** *2019 –2020*

- Associate in London office, summer associate in Boston office June-August 2018, with a focus on technology and go-to-market strategy

Stanford Institute for Economic Policy Research -- *Research Assistant* — **Stanford, CA** *2017 –2019*

- Assisted Professor Muriel Niederle, Professor Matthew Gentzkow, and Professor Paul Oyer in their respective research

World Bank – *Intern* — **Washington, DC** *2018*

- Interned with the Mind, Behavior, & Development Unit (eMBeD): using behavioral sciences to fight global poverty and reduce inequality

Stanford Department of Economics – *Teaching Assistant* — **Stanford, CA** *2017-2018*

- Led 3 section classes over two terms (~70 total students), for Economic Analysis I (introductory microeconomics)

GIC (Government of Singapore Investment Corporation) – *Fixed Income Summer Analyst* — **Singapore, Singapore** *2017*

- Conducted analysis of Fed policies and developed China CPI forecasting tool for Singapore's largest sovereign wealth fund

Ministry of Finance – *Social Programmes Research Intern* — **Singapore, Singapore** *2015*

- Presented research on financial sustainability of long-term care in Singapore to the Social Programmes unit, with focus on policy insight

Ministry of Education – *School Planning and Placement Division Intern* — **Singapore, Singapore** *2015*

- Researched best practices on student integration in local schools for the International Students Integration Section, organised conferences

The world is rapidly changing, and I seek to understand that change. Investigating new digital innovations – in particular, their efficient design and use in actual deployment – underlies much of my research.

My main project—and likely job market paper—***From 0 to 1: Calibrated Coarsening in Human-AI Interaction*** (with Bnaya Dreyfuss) explores the optimal integration of artificial intelligence (AI) and human choice. AI signals are increasingly being deployed as human decision-making aids across an array of critical applications, yet various human cognitive biases can prevent even informative AI predictions from improving decision-making outcomes. In this paper, we show that coarsening at optimised thresholds—or partitioning the signal space into a fewer number of cells—resents a way to improve decision-making outcomes that fulfills the following desiderata: (i) it keeps humans in-the-loop whilst being adaptable to any form of human bias, (ii) it manipulates signals without being coercive or deceptive, and (iii) it is readily portable across diverse contexts. Within a Bayesian persuasion framework with privately informed receivers, we determine the optimal partitioning of signals, as well as characterise the conditions under which coarsening can help. Using a randomised experiment with loan underwriters, we empirically show that the provision of AI signals coarsened at the right thresholds improves overall decision-making outcomes.

Two other projects of mine relate to AI innovation. First, in collaboration with an AI data annotation firm, I aim to explore the labour input into AI innovation. In particular, I aim to answer: how will the evolution of new technologies impact wage structures, and how best to hire and structure work? Second, I am exploring collaborations with a Chinese retina-based AI imaging firm that diagnoses eye-related ailments in medical institutions across Asia. Potential research directions include analysing the impact of sensitivity/specificity adjustments on diagnoses and doctor overrides, as well as exploring the effects of the technology on labour (e.g., wage and supply of specialists) and healthcare outcomes in different regions.

I also have several other projects relating to new technologies. My undergraduate thesis, *Self control and smartphone use: An experimental study of soft commitment devices* (European Economics Review, 2021) sought to understand addiction in the digital space. I've continued this work in graduate school, running an experiment (with Peter Hickman and Yulu Tang) on 13 million active users in collaboration with a large social media platform to document the demand for, and effectiveness of soft commitment devices, in a naturalistic setting orders of magnitude larger than any previous experiment on commitment. I am also studying the causal impacts of smartphone use on youth (with Luca Braghieri, Sarah Eichmeyer, and Matthew Gentzkow) in collaboration with a parental control app, Stanford Impact Labs, and the Utah state government. Separately, I'm working on a large-scale survey on privacy preferences and valuations of data privacy across the world (with Andrew Kao and David Yang), which could shape data-related regulations and the supply of data, a key input in the data-intensive economy.

These are all questions that I am incredibly interested in continuing to pursue. It would therefore be a joy and an honour to participate in the NBER Digital Economics and AI tutorial and meetings, not only to learn directly from the leading researchers in this space, but also to meet and develop relationships with other students and faculty interested in questions such as these.