Hariharan Jayashankar

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Github: https://github.com/HariharanJayashankar Website: https://hariharanjayashankar.github.io

Education

Degrees

- Ph.D in Economics - University of Maryland, College Park — July 2022 - Present
- M.Sc in Economics - London School of Economics — Aug 2016 - June 2017
- B.Sc in Economics and Finance - University of London International Programs (lead college: LSE) — Aug 2013 - June 2016

Additional Coursework

- Linear Algebra and Real Analysis - Harvard Extension School — Sept 2021 - Present
- Rice Math Camp for Phd Economics Students - Rice University — March 2019 - April 2019

Peer-Reviewed Publications

Aysu Okbay, Yeda Wu, Nancy Wang, **Hariharan Jayashankar**, ... & Alexander Young. "Polygenic prediction within and between families from a 3-million-person GWAS of educational attainment." Revised and resubmitted at *Nature Genetics*.

Alexander Young, Seyed Moeen Nehzati, ... **Hariharan Jayashankar**, ... & Augustine Kong. "Mendelian imputation of parental genotypes for estimation of direct and indirect genetic effects." Revised and resubmitted at *Nature Genetics*.

Joel Becker, Casper A. P. Burik, Grant Goldman, Nancy Wang, **Hariharan Jayashankar**, ... & Aysu Okbay. "Resource profile and user guide of the Polygenic Index Repository." *Nature Human Behavior* (2021). https://doi.org/10.1038/s41562-021-01119-3.

Research Experience

NBER - Predoctoral Fellow — **July 2020 - Present**

Provided research assistance to Daniel Benjamin, Alexander Young, David Cesarini and other members of the Social Science Genetic Association Consortium on various projects in genoeconomics.

1. **Within Family Meta Analysis**

- Built a model to meta analyze family based GWAS results from multiple cohorts
- Implemented the model and the accompanying quality control checks in python
- Implmented a pipeline for constructing novel direct effect PGIs from the meta analysis
- Analyzed the direct effect PGIs for within-family predictions and assortative mating

2. **Mendelian imputation of parental genotypes for estimation of direct and indirect genetic effects**

- Built a theoretical model showing how effect vectors from Family based GWAS outputs should behave
- Implemented the model in python, using a maximum likelihood approach to esimate the model parameters
- Constructed standard errors using inverse hessian matrices and block jack knife estimates

3. **Polygenic prediction within and between families from a 3-million-person GWAS of educational attainment**

- Estimated enrichment and heritability proportion using partitioned LD-score regression
- Helped exploring how well the educational attainment PGI predicted various phenotypes

4. **Resource profile and user guide of the Polygenic Index Repository**

- Helped with analysis of PGI predictibility by making visualizations
- Helped writing and editing the final paper

Center for Advanced Financial Research and Learning - *Research Associate* — **June 2018 - June 2020**

Provided research assistance to Gautham Udupa, Nirupama Kulkarni, Amartya Lahiri and others on projects related to finance and macroeconomics.

1. **Estimating the New-Keynesian Phillips Curve for India**

- Conducted literature reviews on the Phillips curve and methods on estimating it
- Collected and managed aggregate and micro data like firm level balance sheet data, gross output and CPI measures
- Estimated various Phillips curve specifications using Generalized Method of Moments
- Produced presentations and reports on our estimates' policy implications for India

2. **Distributional Impacts of Household Financial Inclusion Policies Across Countries**

- Conducted literature reviews on the effects of financial frictions on household behavior

- Collected and managed aggregate and micro data on financial friction measures, and individual balance sheet data
- Produced reports on cross country financial friction outcomes, and how various Indian policies created plausibly exogenous shocks to saving frictions

3. **Impact of Covid-19 on Indian Markets**

- Collected data on stock market, capital flow, and foreign exchange outcomes
- Explored the effect of Covid-19 on the credit availability in India
- Produced reports on the credit crunch and capital outflows that resulted from the pandemic

JPAL - ***Research Associate*** **August 2017 - April 2018**

Provided research assistance to Arun Chandrasekhar, Melanie Morten and Alessandra Peters on conducting field experiments in Bangalore, India

Network-Based Hiring

- Assisted with a field experiment trying to look at frictions to small firms expanding in India
- Involved coming up with the research design for identifying effects of moral hazard, limited commitment and hidden income on firm outcomes
- Managed field staff, and coordinated between multiple vendors

Other Work Experience

Teach for India - ***Volunteer*** **July 2016 - Aug 2016**

Taught Mathematics and English to underpriviliged students of grade 5

Insurance Arbitration Committee, Chennai - ***Assistant to the Chairman*** **July 2016 - Aug 2016**

Analyzed legal documents and wrote a report on a construction related arbitration issue in Chennai, India

Hansa Cequity - ***Data Analysis Intern*** **June 2015 - Aug 2015**

Provided visualizations and writeups looking at investor exit from mutual funds following boom-bust cycles in the stock market

Colliers International - ***Intern*** **June 2014 - July 2014**

Collected and organized commercial tenant data for Mumbai, India

Personal Projects

Linear Time Iteration - ***https://github.com/HariharanJayashankar/Rendahl.jl***

- Implemented model for solving rational expectation models in Julia using Linear Time Iteration
- Can be used to solve and explore various classes of models including DSGE models and heterogenous agent models
- Used it for exploring a basic Real Business Cycle model

A heterogenous agent model with mortgage refinancing - ***https://github.com/HariharanJayashankar/monetary_heter_beraja***

- Replicated Beraja et al (2018) which is a heterogenous agent model based on the Aiyagari-Hugget framework
- Implemented a fast value function iterator for the Bellman equation which solves the individual's recursive problem
- Replicated individual decision results for refinancing

Solow Growth Model Empirics - ***https://github.com/HariharanJayashankar/mrw1992***

- Replicated results of Mankiw, Romer and Weil (1992)
- Extended the results using panel data and an Arrellano Bond estimator. Results do not replicate in this setting

Test Scores

GRE - Quantitative: 170/170, Verbal: 167/170, AW: 4/6. **TOEFL** - 117/120.