JOHN STACHURSKI

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Fields of Interest

- Dynamic programming
- Distribution dynamics
- Computational methods
- Asset pricing
- Markov process theory

Professional Experience

- Professor, Research School of Economics, ANU, 2010–present
- Taught Ph.D level Advanced Macroeconomics, University of Minnesota, 2023
- Taught Ph.D core Macroeconomics, New York University, 2018
- Visiting professor, Department of Economics, New York University, 2015–2016
- Associate professor, Research School of Economics, ANU, 2009–2010
- Associate professor, Kyoto Institute of Economic Research, 2006–2009
- Senior lecturer, Department of Economics, University of Melbourne, 2004–6
- Postdoctoral fellow, CORE, Université Catholique de Louvain, 2003–4
- Postdoctoral fellow, Kyoto Institute of Economic Research, 2002–3

Other Affiliations

- Co-Founder of QuantEcon, Member of Steering Committee
- Research Fellow, Research Institute for Economics and Business, Kobe University

Grants (as Lead Investigator)

- Schmidt Futures Donor Advisor Fund Gift (with Thomas J. Sargent), 2019
- Alfred P. Sloan Foundation Award G-2019-12432 (with Berkeley and NAU), 2019
- Alfred P. Sloan Foundation Award G-2016-7052 (QuantEcon / NumFOCUS), 2016
- Alfred P. Sloan Foundation Award G-2014-14522 (with Thomas J. Sargent), 2014
- Australian Research Council Discovery Grant DP120100321, 2012–2015
- Japan Society for the Promotion of Science Young Scientist Award, 2007–2009
- Murata Science Foundation Research Grant, 2006–2007

Fellowships

- Australian Research Council Future Fellow, 2017–2020
- Australian Research Council Discovery Outstanding Researcher Fellowship, 2012–2015

- Australian Research Council Postdoctoral Fellowship DP0557625, 2004-2005
- CORE Fellowship, Université Catholique de Louvain, 2003–2004
- Japan Society for the Promotion of Science Postdoctoral Fellowship, 2002–2003

Prizes and Awards

- 2024 Elected Fellow of the Society for the Advancement of Economic Theory
- 2007 IJET Lionel W. McKenzie Prize
- 2002 Melbourne University Chancellor's Prize for Excellence

Books

- *Dynamic Programming*
  with Thomas J. Sargent
  Cambridge University Press, in press 2023
  `https://dp.quantecon.org`

- *Economic Networks: Theory and Computation*
  with Thomas J. Sargent
  Cambridge University Press, in press 2023
  `https://networks.quantecon.org`

- *Economic Dynamics: Theory and Computation* (second edition)
  The MIT Press, 2022

- *A Primer in Econometric Theory*
  The MIT Press, 2016

Online Lectures

- *Quantitative Economics*
  with Thomas J. Sargent
  `https://lectures.quantecon.org`

Chapters in Books

- *Poverty Traps*
  with Costas Azariadis
  Handbook of Economic Growth, S. Durlauf and P. Aghion, eds, 2005

Refereed Articles

- *Asset Pricing with Time Preference Shocks: Existence and Uniqueness*
  with Ole Wilms and Junnan Zhang
  Journal of Economic Theory, 216, 105781, 2024

- *QuantEcon.Py: A Community Based Python Library for Quantitative Economics*
  with Quentin Batista, Chase Coleman, et al.
  Journal of Open Source Software, DOI: 10.21105/joss.05585, 2023

- *Coase Meets Bellman: Dynamic Programming for Production Chains*
  with Tomoo Kikuchi, Kazuo Nishimura and Junnan Zhang
  Journal of Economic Theory, 196, 105287, 2021

- *Dynamic Programming with Value Convexity*
  with Guanlong Ren
  Automatica, 130, 109641, 2021

- *Stability of Equilibrium Asset Pricing Models: A Necessary and Sufficient Condition*
  with Jaroslav Borovička
  Journal of Economic Theory, 193, 105227, 2021

- *Dynamic Programming with State-Dependent Discounting*
  with Junnan Zhang
  Journal of Economic Theory, 192, 105190, 2021

- *Partial Stochastic Dominance via Optimal Transport*
  with Takashi Kamihigashi
  Operations Research Letters, 48, 584–586, 2020

- *Reproducibly Sampling SARS-CoV-2 Genomes Across Time, Geography, and Viral Diversity*
  with J. Gregory Caporaso et al.
  F1000 Research, 9.657, 2020

- *The Income Fluctuation Problem and the Evolution of Wealth*
  with Qingyin Ma and Alexis Akira Toda
  Journal of Economic Theory, 187, 2020

- *Necessary and Sufficient Conditions for Existence and Uniqueness of Recursive Utilities*
  with Jaroslav Borovička
  Journal of Finance, 75, 1457–1493, 2020

- *Trade Clustering and Power Laws in Financial Markets*
  with Makoto Nirei and Tsutomu Watanabe
  Theoretical Economics, 15(4), 1365-1398, 2020

- *Dynamic Programming Deconstructed*
  with Qingyin Ma
  Operations Research, in press, 2020

- *An Impossibility Theorem for Wealth in Heterogeneous-agent Models with Limited Heterogeneity*
  with Alexis Akira Toda
  Journal of Economic Theory, 182, 1–24, 2019

- *Optimal Timing of Decisions: A General Theory Based on Continuation Values*
  with Qingyin Ma
  Journal of Economic Dynamics and Control, 101, 62–81, 2019

- *A Unified Stability Theory for Classical and Monotone Markov Chains*
  with Takashi Kamihigashi
  Journal of Applied Probability, 56.1, 2019

- *Span of Control, Transacion Costs and the Structure of Production Chains*
  with Tomoo Kikuchi and Kazuo Nishimura
  Theoretical Economics, 13(2), 729–760, 2018

- *Volatile Capital Flows and Financial Integration: The Role of Idiosyncratic Risk*
  with Tomoo Kikuchi and George Vachadze
  Journal of Economic Theory, 176, 170–92, 2018

- *Seeking Ergodicity in Dynamic Economies*
  with Takashi Kamihigashi
  Journal of Economic Theory, 163, 900–924, 2016

- *Simulation-Based Density Estimation for Time Series using Covariate Data*
  with Yin Liao
  Journal of Business and Economic Statistics, 33, 595–606, 2015

- *Perfect Simulation for Models of Industry Dynamics*
  with Takashi Kamihigashi
  Journal of Mathematical Economics, 56, 9–14, 2015

- *Solving the Income Fluctuation Problem with Unbounded Rewards*
  with Huiyu Li
  Journal of Economic Dynamics and Control, 45, 353–365, August 2014

- *Stochastic Stability in Monotone Economies*
  with Takashi Kamihigashi
  Theoretical Economics, 9 (2), 383-407, 2014

- *Stochastic Optimal Growth with Risky Labor Supply*
  with Yiyong Cai and Takashi Kamihigashi
  Journal of Mathematical Economics, 50, 167–176, 2014

- *Fitted Value Function Iteration with Probability One Contractions*
  with Jeno Pal
  Journal of Economic Dynamics and Control, 37 (1), 251-264, 2013

- *Simple Fixed Point Results for Order-Preserving Self-Maps and Applications to Nonlinear Markov Operators*
  with Takashi Kamihigashi
  Fixed Point Theory and Applications, 2013:351, 2013

- *Generalized Look-Ahead Methods for Computing Stationary Densities*
  with R. Anton Braun and Huiyu Li
  Mathematics of Operations Research, 37, 489-500, 2012

- *An Order-Theoretic Mixing Condition for Monotone Markov Chains*
  with Takashi Kamihigashi
  Statistics and Probability Letters, 82, 262–267, 2012

- *Bounding Tail Probabilities in Dynamic Economic Models*
  Macroeconomic Dynamics, 16, 117–126, 2012

- *Perfect Simulation of Stationary Equilibria*
  with Kazuo Nishimura
  Journal of Economic Dynamics and Control, 34, 577–584, 2010

- *Endogenous Inequality and Fluctuations in a Two-Country Model*
  with Tomoo Kikuchi
  Journal of Economic Theory, 144 (4), 1560–1571, 2009

- *On Geometric Ergodicity of the Commodity Pricing Model*
  with Kazuo Nishimura
  International Journal of Economic Theory, 5 (3), 293–300, 2009

- *Equilibrium Storage with Multiple Commodities*
  with Kazuo Nishimura
  Journal of Mathematical Economics, 45, 80–96, 2009

- *Computing the Distributions of Economic Models via Simulation*
  with Vance Martin
  Econometrica, 76 (2), 443–450, 2008

- *Continuous State Dynamic Programming via Nonexpansive Approximation*
  Computational Economics, 31 (2), 141–160, 2008

- *Log-Linearization of Stochastic Economic Models*
  Journal of Difference Equations and Applications, 13 (2&3), 217–222, 2007

- *Parametric Continuity of Stationary Distributions*
  with Cuong Le Van
  Economic Theory, 33 (2), 333–348, 2007

- *Stochastic Optimal Growth when the Discount Rate Vanishes*
  with Kazuo Nishimura
  Journal of Economic Dynamics and Control, 31 (4), 1416–1430, 2007

- *Stochastic Optimal Growth with Nonconvexities*
  with Kazuo Nishimura and Ryzard Rudnicki
  Journal of Mathematical Economics, 42 (1), 74–96, 2006

- *Some Stability Results for Markovian Economic Semigroups*
  with Leonard Mirman and Kevin Reffett
  International Journal of Economic Theory, 1 (1), 57–72, 2005

- *Stability of Stochastic Optimal Growth Models: A New Approach*
  with Kazuo Nishimura
  Journal of Economic Theory, 122 (1), 100–118, 2005

- *Stochastic Growth with Increasing Returns: Stability and Path Dependence*
  Studies in Nonlinear Dynamics and Econometrics, 7 (2), Article 1, July 2003

- *Stochastic Growth: Asymptotic Distributions*
  Economic Theory, 21 (4), 913–919, 2003

- *Economic Dynamical Systems with Multiplicative Noise*
  Journal of Mathematical Economics, 39 (1–2), 135–152, 2003

- *Stochastic Optimal Growth with Unbounded Shock*
  Journal of Economic Theory, 106 (1), 40–65, 2002

Other Publications

- *Corrigendum to An Impossibility Theorem for Wealth in Heterogeneous-Agent Models with Limited Heterogeneity*
  with Alexis Akira Toda
  Journal of Economic Theory, in press, 2020

- *Nonlinear Dynamics in Equilibrium Models: Chaos, Cycles and Indeterminacy*
  with Alain Venditti and Makoto Yano (eds)
  Springer, 2012

Scholarships

- Australian Postgraduate Award, 1999–2002
- Monbusho Research Scholarship (Tokyo University), 1993–7

Other Professional Activities

- **Program Chair**
  - World Congress of the Econometric Society 2020: Computational Economics

- **Advisory Boards**
  - OSE Lab, Becker-Friedman Institute, University of Chicago, 2017-
  - Alfred P. Sloan Foundation Digital Technology Advisory Group, 2017-2019

- **Workshops (Lead Organizer)**
  - 2023 QuantEcon Workshop on High Performance Computing at Columbia University
  - 2023 Workshop on Parallelization and GPU Computing at the Australian Treasury
  - 2022 Workshop on Dynamic Programming and High Performance Computing at the Central Bank of Chile
  - 2017 QuantEcon PhD Workshops on Computational Economics at Columbia University, MIT, Harvard, Princeton, Berkeley, Stanford, UCLA, UCSD

- 2017 Reserve Bank of Australia and Reserve Bank of New Zealand Computational Economics with Python and Julia Workshops
- 2016 Econometric Society Workshop on Python and Julia at the Summer Meetings of the Econometric Society, Philadelphia
- 2016 Workshop on Scientific Computing at the Federal Reserve Bank of Chicago

- **Short Courses**
  - Open Source Macroeconomics Lab instructor, University of Chicago , June 2018
  - Shenzhen Winter School Computational Economics instructor, June 2018
  - Columbia University Mini Course on Computational Economics, March 2018
  - Tinbergen Short Course on Computational Economics, June 2018
  - Open Source Macroeconomics Lab instructor, University of Chicago , June 2017

- **Keynotes and Invited Sessions**
  - Invited speaker, computational methods seminar, International Monetary Fund, October 2023
  - Invited speaker at Deep Learning for Solving and Estimating Dynamic Models, Lausanne, September 2023
  - Invited talk on dynamic programming at the Dynamic Structural Estimation Conference, December 2022
  - 2018 Econometric Society Australiasian Meeting, Auckland, July 2018
  - 26th Annual Symposium of the Society for Nonlinear Dynamics and Econometrics, Tokyo, March 2018
  - 2013 Econometric Society Australiasian Meeting, Sydney, July 2013

- **Research Visits**
  - New York University, October 2023
  - Tokyo College, Tokyo University, April 2023
  - Kobe University, April 2023
  - Department of Economics, Tokyo University, July 2022
  - RIEB, Kobe University, October 2019
  - National University of Singapore, Economics Department, December 2018
  - Chicago University, Becker–Friedman Institute, July 2018
  - Tinbergen Institute, June 2018
  - Department of Economics, Copenhagen University, May 2018
  - Chicago University, Becker–Friedman Institute, July 2017
  - RIEB Kobe University, February 2017
  - Singapore Management University, January 2017
  - Department of Economics, Keio University, October 2016
  - Montana USA (working with Tom Sargent), August 2016
  - Department of Economics, UC Santa Barbara, July 2016

- Department of Economics, Georgetown University, May 2016
- Singapore Management University, January 2015
- RIEB Kobe University, September 2014
- New York University, April 2014
- Montana USA (working with Tom Sargent), September 2013
- National University of Singapore, August 2013
- Seoul National University, April 2013 and May 2013
- National University of Singapore, April 2013
- KIER, Kyoto University, December 2012
- National University of Singapore and Kyoto University, Sept/Oct 2012
- Department of Economics, National University of Singapore, July 2012
- KIER, Kyoto University and RIEBA, Kobe University, May 2012
- Department of Economics, Cornell University, December 2011
- KIER, Kyoto University, July 2011
- Department of Management Science, Stanford University, July 2011
- KIER, Kyoto University, November 2010
- Department of Economics, Tokyo University, February 2010
- KIER, Kyoto University, February 2010
- Department of Economics, Melbourne University, February 2008
- School of Economics, University of Tasmania, February 2008
- Department of Economics, Hokkaido University, January 2008
- Department of Economics, National University of Singapore, October 2007
- WP Carey School of Business, Arizona State University, February 2006
- Economics Department, UCLA, May 2005
- RIEBA, Kobe University, February 2005
- Economics Department, SMU, Dallas, January 2005
- G.R.E.Q.A.M. at Marseille, April 2004
- WP Carey School of Business, Arizona State University, March 2004
- Economics Department, UCLA, February 2004
- Institute of Mathematics, Silesian University, Poland, December 2001
- CentER, Tilburg University, The Netherlands, November 2001
- CERMSEM, Université Paris 1, Panthéon–Sorbonne, October 2001

Education

- Ph.D. in Economics, University of Melbourne, 2002
- Masters in Economics, University of Tokyo, 1997
- Bachelor of Arts, University of Melbourne, 1993

Other Skills

- Japanese language
- Programming in Python, Julia and C; UNIX environment

Other Achievements

- Gold, first taekwondo Olympic selection trial, U58kg, 1999
- Gold, Australian national taekwondo championships, 54–58kg, 1993
- Gold, Japanese national taekwondo championships, U54kg, 1991