



## Fedor Iskhakov *Professor of Economics*

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I'm an applied microeconomist and a computational economist working in the field of structural estimation of dynamic models of individual and strategic choice, with applications to labor economics, public economics, durable goods markets, household finance, industrial organization and dynamic games.

### Current and Previous Academic Positions

Professor	From 2020
Associate Professor	2019 – 2020
Senior Lecturer Research School of Economics, The Australian National University, Canberra	2016 – 2018
Australian Research Council (ARC) Future Fellow	2019 – 2023
Senior Research Fellow ARC Centre of Excellence in Population Ageing Research (CEPAR), University of New South Wales, Sydney	2013 – 2016
Research Fellow Center of Study of Choice (CenSoC), University of Technology, Sydney	2010 – 2012
Postdoctoral Research Fellow Economic Institute, University of Oslo	2009 – 2010

### Education

Ph.D. in Economics University of Oslo, Norway	2009	Candidate Sc. in Economic Cybernetics St.Petersburg State University, Russia	2006
M.Sc. in Economics University of Oslo, Norway	2003	Specialist in Mathematical Economics St.Petersburg State University, Russia	2001

### Publications

Selected published papers

- [1] Kenneth Gillingham, Fedor Iskhakov, Anders Munk-Nielsen, John Rust, and Bertel Schjerning. Equilibrium Trade in Automobiles. *Journal of Political Economy*, 130(10):2534–2593, October 2022
- [2] Fedor Iskhakov and Michael Keane. Effects of taxes and safety net pensions on life-cycle labor supply, savings and human capital: The case of Australia. *Journal of Econometrics*, 223(2):401–432, August 2021
- [3] Fedor Iskhakov, John Rust, and Bertel Schjerning. Machine learning and structural econometrics: Contrasts and synergies. *The Econometrics Journal*, 23(3):S81–S124, August 2020
- [4] Fedor Iskhakov, John Rust, and Bertel Schjerning. The dynamics of Bertrand price competition with cost-reducing investments. *International Economic Review*, 59(4):1681–1731, 2018
- [5] Julie Agnew, Hazel Bateman, Christine Eckert, Fedor Iskhakov, Jordan Louviere, Stephen Satchell, and Susan Thorp. First impressions matter: An experimental investigation of online financial advice. *Management Science*, 64(1):288–307, January 2018
- [6] Fedor Iskhakov, Thomas Jørgensen, John Rust, and Bertel Schjerning. The endogenous grid method for discrete-continuous dynamic choice models with (or without) taste shocks. *Quantitative Economics*, 8(2):317–365, 2017

- [7] Fedor Iskhakov, John Rust, and Bertel Schjerning. Recursive lexicographical search: Finding all markov perfect equilibria of finite state directional dynamic games. *The Review of Economic Studies*, 83(2):658–703, 2016
- [8] Fedor Iskhakov, Jinhyuk Lee, John Rust, Bertel Schjerning, and Kyoungwon Seo. Constrained optimization approaches to estimation of structural models: Comment. *Econometrica*, 84(1):365–370, January 2016
- [9] Fedor Iskhakov. Multidimensional endogenous gridpoint method: Solving triangular dynamic stochastic optimization problems without root-finding operations. *Economics Letters*, 135:72–76, October 2015
- [10] Fedor Iskhakov. Structural dynamic model of retirement with latent health indicator. *The Econometrics Journal*, 13(3):S126–S161, October 2010

#### Other published papers

- [11] Susan Thorp, Junhao Liu, Julie Agnew, Hazel Bateman, Christine Eckert, and Fedor Iskhakov. Feeling comfortable with a mortgage: The impact of framing, financial literacy and advice. April 2023
- [12] Michael Keane, Dennis Kristensen, Fedor Iskhakov, and Bertel Schjerning. Overview: Implementation of structural dynamic models: Methodology and applications. *Journal of Econometrics*, 223(2):277–279, August 2021
- [13] Fedor Iskhakov, John Rust, and Bertel Schjerning. Special Issue on Methodology and Applications of Structural Dynamic Models and Machine Learning. Editorial. *The Econometrics Journal*, 23(3):Si–Siii, October 2020
- [14] Hazel Bateman, Christine Eckert, Fedor Iskhakov, Jordan Louviere, Stephen Satchell, and Susan Thorp. Individual capability and effort in retirement benefit choice. *Journal of Risk and Insurance*, 85(2):483–512, 2018
- [15] Hazel Bateman, Christine Eckert, Fedor Iskhakov, Jordan Louviere, Stephen Satchell, and Susan Thorp. Default and naive diversification heuristics in annuity choice. *Australian Journal of Management*, 42(1):32–57, 2017
- [16] Fedor Iskhakov. Corrigendum to “Multidimensional endogenous gridpoint method: Solving triangular dynamic stochastic optimization problems without root-finding operations” [Econ. Lett. 135 (2015) 72–76]. *Economics Letters*, 150:26, 2017
- [17] Fedor Iskhakov, Susan Thorp, and Hazel Bateman. Optimal annuity purchases for Australian retirees. *Economic Record*, 91(293):139–154, 2015
- [18] Sarbartha Bandyopadhyay, Fedor Iskhakov, Terence Johnson, Soohyung Lee, David McArthur, John Rust, Joel Watson, and John Watson. Can the job market for economists be improved? In Nir Vulkan, Alvin E. Roth, and Zvika Neeman, editors, *Handbook of Market Design*. Oxford University Press, 2013

#### Work in progress

- [19] Fedor Iskhakov, Dennis Kristensen, John Rust, and Bertel Schjerning. Structural estimation of dynamic directional games with multiple equilibria
- [20] Kenneth Gillingham, Fedor Iskhakov, Anders Munk-Nielsen, John Rust, and Bertel Schjerning. A dynamic model of vehicle ownership, type choice, and usage
- [21] Jaap H. Abbring, Øystein Daljord, and Fedor Iskhakov. Identifying present-biased discount functions in dynamic discrete choice models
- [22] Christian Langholz Carstensen, Maria Juul-Hansen, Fedor Iskhakov, John Rust, and Bertel Schjerning. A dynamic equilibrium model of commuting, residential and work location choices
- [23] Julie Agnew, Hazel Bateman, Christine Eckert, Fedor Iskhakov, Jordan Louviere, Stephen Satchell, and Susan Thorp. Who Pays the Price for Bad Advice?: The Role of Financial Vulnerability, Learning and Confirmation Bias?
- [24] Fedor Iskhakov, Efthymia Kyriakopoulou, Philip Ushchev, and Yves Zenou. Location, social norms and recycling

## Awards

- Australian Research Council Future Fellowship. “Solving and estimating dynamic models of strategic interaction.” \$857,585AUD, 2019-2022
- Australian Research Council Discovery Project. “Understanding and overcoming confusion in consumer financial decisions.” \$660,000AUD, 2019-2021
- Finalist of 2017 TIAA Paul A. Samuelson Award. “First Impressions Matter: An Experimental Investigation of Online Financial Advice”
- Early Career Researcher Grant. \$25,000AUD, University of Technology, Sydney, 2012-2013
- His Majesty the King’s of Norway Golden Medal (Hans Majestet Kongens Gullmedalje). Best research in social sciences among young researchers in Norway in 2008

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## Professional Service

### Conference organizing committees

August, 2024. The Laurits R. Christensen Econometric Society Summer School in Dynamic Structural Econometrics 2024 “Policy Evaluation and Heterogeneity Measurement” University of Wisconsin, Madison

August, 2023. Annual conference on Structural Dynamic Models “Deep Learning for Solving and Estimating Dynamic Models” University of Lausanne, Switzerland

December, 2022. Annual conference on Structural Dynamic Models “Methodology and applications of dynamic structural models with strategic interactions” ANU

August, 2022. Annual conference on Structural Dynamic Models “Market design”, MIT

May, 2022. Conference to Honor John Rust, Georgetown University, Georgetown University

August, 2021. Annual conference on Structural Dynamic Models “Household decision making and human capital in life-cycle models”, University of Bonn

July, 2019. “3rd Conference on Structural Dynamic Models”, Booth School of Business, University of Chicago

May 31 - June 1, 2018. “2nd Conference on Structural Dynamic Models: Methodology and Applications of Structural Dynamic Models and Machine Learning”, University of Copenhagen

August, 2017. “Implementation of Structural Dynamic Models: Methodology and Applications”, University College London, UK

June, 2010. “Dynamic Aspects in Economic Decision Making”, University of Copenhagen, Denmark

### Editorial service

Guest co-editor for the special issue of *The Econometrics Journal* “Methodology and Applications of Structural Dynamic Models and Machine Learning”, 2018-2019

Guest co-editor for the special issue of *Journal of Econometrics (Annals of Econometrics)* “Implementation of Structural Dynamic Models: Methodology and Applications”, 2017-2018

Editor-in-Chief and co-founder, *Journal of Open Source Economics (JOSEcon)*, from 2019

### Refereeing

*Econometrica*, *Review of Economic Studies*, *Journal of Political Economy*, *International Economic Review*, *RAND Journal of Economics*, *Management Science*, *Journal of Econometrics*, *The Econometrics Journal*, *Quantitative Economics*, *Journal of Economic Dynamics and Control*, *Labour Economics*, *Economics Letters*, *Computational Economics*, *Journal of Pension Economics and Finance*, *Economics of Education Review*, *Economic Record*

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## Teaching

Econometric Society Summer School in Dynamic Structural Econometrics (DSE)

University of Wisconsin, Madison

August 2024

With John Rust, Bertel Schjerning and Robert Miller, *several lectures during short course (5 days)*

Optimisation for Economics and Financial Economics

2023, 2024

Undergraduate/graduate course at ANU

Mathematical Techniques for Economic Analysis

2024

Graduate course at ANU

DSE2023, University of Lausanne

August 2023

DSE2022AUS, Australian National University

December 2022

Computational Methods in Economics

2018 to 2021

Undergraduate/graduate/postgraduate course at ANU

DSE2022MIT, Massachusetts Institute of Technology	August 2022
DSE2021, University of Bonn	July 2019
Dynamic programming and structural estimation Short course at Higher School of Economics, St. Petersburg, Russia	January 2020
DSE2019, Chicago Booth School of Business	July 2019
Copenhagen Summer School on Structural Dynamic Models	2018
QuantEcon Honours Workshop With John Stachurski and Thomas J. Sargent <i>Invited lecture during a one day graduate workshop</i>	2018
Georgetown University Masterclass "Dynamic Programming", with John Rust and Bertel Schjerning, <i>short course (2 days)</i>	2017
Zurich Initiative on Computational Economics (ZICE) University of Zurich, Switzerland, <i>several lectures during short course (7 days)</i>	2014, 2015, 2017
University of Macedonia: Short Course in Economics (SCE) With John Rust and Bertel Schjerning, <i>short course (5 days)</i>	2016
Centre for Microdata Methods and Practice (CEMMAP) UCL and IFS, with John Rust and Bertel Schjerning, <i>2 day short course</i>	2015
INFORMS Summer School on Dynamic Discrete Choice Models CIRRELT, University of Montreal, <i>invited lecture</i>	2015
Applied econometrics Graduate School of Management, St.Petersburg State University, Russia, <i>lecturer</i>	2009, 2010

### Student Supervision and Graduation Committee Membership

Wending Liu, <i>doctoral thesis</i> , main supervisor	ANU, 2025
Simon Mishrichy, <i>doctoral thesis</i> , supervisory panel	ANU, 2025
Chien Yeh, <i>doctoral thesis</i> , supervisory panel	ANU, 2023
Zhuoran (Mike) Liu, <i>doctoral thesis</i> , supervisory panel	ANU, 2023
Aaron Ellis-Bloor, <i>honours thesis</i> , <i>University Medal</i> , co-supervisor	ANU, 2022
Yurui (Tina) Zhang, <i>doctoral thesis</i> , supervisory panel	ANU, 2022
Yifan Wang, <i>honours thesis</i> , co-supervisor	ANU, 2022
Derek Wu, <i>honours thesis</i> , co-supervisor	ANU, 2021
Toan Le, <i>honours thesis</i> , main supervisor	ANU, 2018
Oskar Blom Västberg, <i>doctoral thesis</i> , committee member	KTH Royal Institute of Technology, 2018
Yan Zhang, <i>master thesis</i> , main supervisor	University of Oslo, Norway, 2009

### Computational and IT skills

Extensive programming experience Python, JAX, Matlab, C, OpenMP, MPI	Citizenship	Russia, Australia
Advanced data analysis SAS, STATA, TSP, SQL, MySQL, PostgreSQL	Marital status	Married, two children
Intermediate skills in web development	Russian (native), English (fluent), Norwegian (basic)	
Basic system administration (Unix)		

### Conferences and Seminar Presentations

2024	(3 conference presentations so far)
30th Conference on Computing in Economics and Finance, Singapore; Optimization Conscious Econometrics III conference, University of Chicago; Laurits R. Christensen Dynamic Structural Econometrics Conference in Policy Evaluation and Heterogeneity Measurement (DSE2024), University of Wisconsin, Madison;	
2023	(3 talks + 4 conference presentations)
National University of Singapore; University of Sydney, School of Economics; Swedish University of Agricultural Sciences; International Association for Applied Econometrics 2023 Annual Conference, Oslo, Norway; 29th Conference on Computing in Economics and Finance, Nice; Australasian Leadership Computing Symposium, Australian National University; Econometric Society 2023 Australasia Meeting, University of New South Wales, Sydney;	

- 2022 (2 talks + 4 conference presentations)  
20th annual International Industrial Organization Conference, Boston; Conference to Honor John Rust, Georgetown University; Workshop on Dynamic Effects of Public Expenditure, Copenhagen University; Workshop on Perturbed Utility and the Car Market, Copenhagen University; Sciences Po, Paris; ARC Center of Excellence for Population Ageing Research (CEPAR), University of New South Wales;
- 2021 (2 talks + 2 conference presentations)  
Department of Economics, Cornell University (virtual); Center for Market Studies and Spatial Economics, Higher School of Economics, St.Petersburg (virtual); Econometric Society Australasian Meeting (virtual); China meeting of Econometric Society (virtual);
- 2020 (1 talk + 1 conference presentation)  
St.Petersburg Economics Seminar, Higher School of Economics, St.Petersburg; Econometric Society World Congress, Milan (virtual);
- 2019 (4 talks + 2 conference presentations)  
ANU-Treasury Fiscal Policy Modelling Workshop, Canberra; Institute for Applied Microeconomics, Bonn; OpenSourceEconomics, Bonn; National Research University Higher School of Economics, St.Petersburg; Yale School of Forestry and Environmental Studies, Yale University; Tepper School of Business, Carnegie Mellon University;
- 2018 (3 talks + 2 conference presentations)  
24th International Conference on Computing in Economics and Finance; Department of Economics, Monash University; European University in St.Petersburg; KTH Royal Institute of Technology, Stockholm, Sweden; American Economic Association, Allied Social Science Associations Annual Meeting;
- 2017 (3 talks + 4 conference presentations)  
Inaugural conference of Asian and Australasian Society of Labor Economics (AASLE); Macroeconomic Group, Department of the Treasury, Australian Government; Workshop on urbanization, productivity, congestion and car-ownership, University of Copenhagen; Implementation of Structural Dynamic Models: Methodology and Applications, University College London; International Association for Applied Econometrics 2017 Annual Conference, Hokkaido University, Sapporo, Japan; Discipline of Business Analytics, The University of Sydney Business School; Berlin Applied Micro Seminar, DIW, Berlin; International Pension Workshop 2017, Netspar, Netherlands;
- 2016 (8 talks + 5 conference presentations)  
Longitudinal Data Conference 2016, Canberra, ACT; Workshop on urbanization, productivity, congestion and car-ownership, University of Copenhagen; Department of Economics, University of Copenhagen; Department seminar, HSE, St. Petersburg; Stanford Institute for Theoretical Economics (SITE); 22nd International Conference on Computing in Economics and Finance, Bordeaux, France; International Association for Applied Econometrics (IAAE) 2016 Annual Conference, University of Milano-Bicocca, Italy; New Economic School, Moscow; International College of Economics and Finance (ICEF), Higher School of Economics, Moscow; Research School of Economics, Australian National University; Department of Economics, Concordia University, Montreal; Department of Economics, University of Massachusetts, Amherst; Department of Economics, University College London;
- 2015 (5 talks + 2 conference presentations)  
Department of Economics, University of Copenhagen; Centre for Microdata Methods and Practice (CEMMAP), London (2 talks); Econometric Society World Congress, Montreal; International Association for Applied Econometrics (IAAE) 2015 Annual Conference, Thessaloniki, Greece; Summer School on Dynamic Discrete Choice Models, University of Montreal; International College of Economics and Finance, HSE, Moscow;
- 2014 (4 talks + 9 conference presentations)  
Means Testing Workshop, CEPAR, University of New South Wales; Department of Economics, UNSW; Q group colloquium, Sydney; Australian Colloquium of Superannuation Researchers; Econometric Society Australasian Meeting, Australian Conference of Economists (2 presentations); International Association for Applied Econometrics (IAAE) 2014 Annual Conference, London; 20th International Conference on Computing in Economics and Finance, Oslo, Norway; 5th Microeconomic Network Meeting Copenhagen; Department of Economics, UNSW; Centre for International Finance and Regulation (CIFR) workshop "Financial System Inequity", Sydney; Department of Economics, University of Zurich; Econometric Society North American Winter Meeting;
- 2013 (2 talks + 3 conference presentations)  
Department of Economics, Australian National University; Department of Economics, La Trobe University; Econometric Society Australasian Meeting; 1st CEPAR International Conference; Marketing and Public Policy Conference;
- 2012 (1 talk + 3 conference presentations)  
School of Risk and Actuarial Studies, University of New South Wales; Society for Computational Economics, 18th International Conference on Computing in Economics and Finance, Prague, Czech Republic; Society for Economic Dynamics Annual Meeting, Limassol, Cyprus (2 talks);
- 2011 (1 talk + 4 conference presentations)  
Intelligent road user charging (IRUC) workshop, Copenhagen; Division of Economics, Nanyang Technological University, Singapore; 19th Annual Colloquium of Superannuation Researchers, UNSW; 40th Australian Conference of Economists, Australian National University; Econometric Society Australasian Meeting, 2011;
- 2010 and before (5 talks + 7 conference presentations)  
New Economic School; Department of Economics, American University; Department of Agricultural and Resource Economics, University of Maryland; Department of Economics, University of Maryland; 3rd Italian Congress of Econometrics and Empirical Economics, Ancona, Italy; Fourth PhD Presentation Meeting, UCL, London; EC-square 19th conference, Rome; Simposio de Analisis Economico, Zaragoza, Spain; Center for Applied Econometrics at the University of Copenhagen (CAM); International conference at Graduate School of Management, St.Petersburg State University; Det 29. Nasjonale Forskermøtet for Økonomer, Tromsø; 19th ESPE Conference, Paris, France;