

Maria Kleshnina

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Academic Positions

01/10/2021 – Present Institute for Advanced Studies in Toulouse, France
Postdoctoral research fellow

01/04/2019 – 30/09/2021 Institute of Science and Technology Austria, Austria
Postdoctoral research fellow
Supervisor: Prof Krishnendu Chatterjee

Education

Ph.D. 15/11/2015 – 12/04/2019 The University of Queensland (Brisbane, Australia)
Thesis: Incompetence and Evolutionary Dynamics
Focus: Population dynamics, Evolutionary game theory, Microbiology
Supervision: Dr Jerzy A. Filar, Dr James G. Mitchell, Dr Vladimir Ejev, Dr Amie Albrecht

Ms.A. 01/09/2006 – 30/06/2011 Siberian State University of Telecommunications and Information Sciences (Novosibirsk, Russia)
Thesis: Quality control of credit portfolio on a basis of scoring model
Focus: Data analysis, Economics, Risk modelling, Econometrics
Adviser: Dr Vladimir Pyrlík
GPA: 5.0 (out of 5.0)

Research Interests

Evolutionary game theory, Cooperation, Dynamic Systems, Human behaviour, Microbiology

Publications

Refereed Publications

Kleshnina M., Filar J.A., Ejev V. and McKerrall J.C. *Evolutionary games under incompetence*. Journal of mathematical biology 77 (3), 627-646, 2018. <https://doi.org/10.1007/s00285-018-1221-2>

Kleshnina M., Streipert S., Filar J.A. and Chatterjee K. *Prioritised Learning in Snowdrift-type Games*. Mathematics, 8(11), 2020. <https://doi.org/10.3390/math8111945>

Kleshnina M., Streipert S., Filar J.A. and Chatterjee K. *Mistakes can stabilise the dynamics of rock-paper-scissors games*. PLoS Comp Biol: 17 (4), 2021. <https://doi.org/10.1371/journal.pcbi.1008523>

Publications Submitted and Under Preparation for Submission

McKerrall J.C., Kleshnina M., Bartle L., Mitchell J.G. and Filar J.A. *Universal allometry from empirical parameters*. Submitted, 2021

Graham T., Kleshnina M. and Filar J.A. *Where Do Mistakes Lead? A Survey of Games with Incompetent Players*. Submitted, 2021

Kleshnina M., McKerral J.C., Gonzalez-Tokman C., Filar J.A. and Mitchell J.G. Shifts in evolutionary balance of microbial phenotypes under environmental changes. Submitted, 2020

McKerral J.C., Seymour J.R., Lavery T.J., Rogers P.J., Jeffries T.C., Paterson J.S., Roudnew B., Huveneers C., Newton K., van Dongen Vogels V.S.C.M., Chaperon C., Cribb N.P., Winn K.M., Smith R.J., Beckmann C.L., Prime E., Charlton C.M., *Kleshnina M.*, Hu X., Sun S., Dann L., Seuront L., Mitchell J.G. *Synergy of turbulence and fishing impact ocean biosphere. Submitted, 2020*

Kleshnina M., McKerral J.C., Filar J.A. and Mitchell J.G. Game theoretic approach to marine bacteria foraging strategies in fluctuating environments. In preparation, 2020

Kleshnina M., Kaveh K., Chatterjee K. The rule of behavioural plasticity in finite vs infinite populations. In preparation, 2020

Kleshnina M., Hilbe C., Chatterjee K. and Nowak M. Value of information in evolutionary games with environmental feedbacks. In preparation, 2021

Staab M., *Kleshnina M.*, Huebner V., Hilbe C. and Chatterjee K. *Optimal sharing in social dilemmas. In preparation, 2021*

Kleshnina M., Staab M., Grosch K. and Chatterjee K. Being categorical or flexible? Decision-making rule that facilitates cooperation. In preparation, 2021

Grosch K., Fischer S., *Kleshnina M.* and Staab M. *Feedback, performance, and belief update - experimental evidence. In preparation, 2021*

Huebner V., *Kleshnina M.*, Staab M., Hilbe C. and Chatterjee K. *Optimal contributions in asymmetric public goods games. In preparation, 2021*

Fellowships and grants

- IAST postdoctoral fellowship funded from the French Agence Nationale de la Recherche (under the Investissement d'Avenir programme, ANR-17-EURE-0010), call Autumn 2020
- ISTplus fellowship funded from the European's Union Horizon 2020 Research and Innovation programme under the Marie Skłodowska-Curie grant agreement #754411, call Autumn 2018

Awards and Honours

- The Seal Of Excellence, Marie Skłodowska-Curie actions Individual Fellowships, Call 2020
- The Seal Of Excellence, Marie Skłodowska-Curie actions Individual Fellowships, Call 2019
- Honourable mention from the B.H. Neumann Student Prize Committee, AustMS (Adelaide, Australia), November 2018
- The Cheryl E. Praeger Travel Award, AustMS WIMSIG (Brisbane, Australia), May 2018
- ANZIAM Student Travel Award, ANZIAM AustMS (Hobart, Australia), February 2018
- The Outstanding Tutor Award, The University of Queensland (Brisbane, Australia), November 2017
- ANZIAM Student Travel Award, ANZIAM AustMS (Adelaide, Australia), February 2017
- AMSI Summer School Travel Award, AMSI (Sydney, Australia), January 2017
- Finalist of the Australian Mathematical Sciences Institute Three-minute Thesis Competition, December 2016
- AMSI Summer School Travel Award, AMSI (Melbourne, Australia), January 2016
- The Best Project Manager Award, OJSC Promsvyazbank (Moscow, Russia), December 2013

Service and Volunteering

- Organising Tuesday lunch seminar series at IAST, 2021-2022
- Organising a session “Success and stability in bacterial competition and adaptation” at MMEE2019
- Volunteer for the Australian Mathematical Society Student Conference Organising Committee, 2018
- Volunteer for the Australian Freediving Association (Treasurer), 2017 - 2019
- Volunteer for WIMSIG Dinner, September 2016
- Volunteer for Quality in Postgraduate Research Conference, April 2016

Teaching and Supervising Experience

01/02/2017 – 30/11/2018	The University of Queensland, Australia Casual tutor for “The Bifurcations and Chaos”, “The Natural Resource Management” and “Mathematics for Data Scientists”
1/12/2017 – 31/01/2018	The University of Queensland, Australia Teaching Assistant for a Summer Research Project

Industry Experience

2014 - 2015	<i>OJSC Promsvyazbank (Moscow, Russia)</i> <i>Chief sales developing manager</i> <ul style="list-style-type: none">• Performed automated under-writing (“web-guarantees”) for government contracts through data-driven return-on-investment and profit-loss projections with the focus on risk assessment• Provisioned the extension of sales network on non-banking organizations. Interpreted data on price, yield, stability, economic influences, and other factors affecting the market. Prepared operational and risk reports on projects status and results for management analysis
2011 - 2014	<i>OJSC Promsvyazbank (Moscow, Russia)</i> <i>Project manager in efficiency of corporate credit</i> <ul style="list-style-type: none">• Optimized and managed the corporate credit process by developing a new work-flow software for corporate decision making. Performed business analytic skills, tracked project budget and expenses• Provisioned advice on increasing bank efficiency through analysis of out coming data from the developed software with the focus on risk assessment

Presentations

Conferences

July 2019	Mathematical Models in Evolution and Ecology (Lyon, France) <i>Talk on the nonlinear learning in evolutionary games</i>
July 2019	New Approaches and Concepts in Microbiology, EMBL (Heidelberg, Germany) <i>Poster on game theoretic approach to marine bacteria foraging strategies in fluctuating environments</i>
June 2019	European Conference on Operational Research (Dublin, Ireland) – invited talk <i>Talk on the nonlinear learning in evolutionary games</i>
November 2018	Australian Mathematical Society Annual Meeting (Adelaide, Australia) <i>Talk on the learning advantages in evolutionary games</i>

- July 2018 International Society on Dynamic Games (Grenoble, France)
Talk on the incompetence in evolutionary games
- June 2018 Game Theory and Management (St. Petersburg, Russia)
Talk on the incompetence in evolutionary games
- February 2018 Australia and New Zealand Industrial and Applied Mathematics (Hobart, Australia)
Talk on the nonlinear learning in evolutionary games under incompetence
- November 2017 Sydney Dynamical Group Workshop (Sydney, Australia)
Poster on the incompetence in evolutionary games
- October 2017 Workshop on Applications in Natural Resource Mathematics (Brisbane, Australia)
Talk on the incompetence in microbial games
- September 2017 Celebration of Women in Australian Mathematical Sciences Conference (Adelaide, Australia)
Talk on the incompetence in microbial games
- June 2017 World Conference on Natural Resource Modelling (Barcelona, Spain)
Talk on the incompetence in microbial games
- February 2017 Australia and New Zealand Industrial and Applied Mathematics (Adelaide, Australia)
Talk on the evolutionary games under incompetence

Seminar Presentations

- September 2021 Oskar-Morgenstern-Platz Meeting 2021, University of Vienna
Optimal sharing in social dilemmas
- June 2021 WU Bown bag Seminar Series, WU Vienna
Categorical or flexible? Sustaining cooperation among unequals
- April 2021 Stochastic seminar series, IST Austria
Value of information in evolutionary games with environmental feedbacks
- March 2021 IHS Seminar Series, IHS
Modelling the evolution of social behaviour: addressing heterogeneity
- January 2020 Evolutionary lunch seminar series, IST Austria
Game theory and its applications in biology: a brief introduction
- May 2018 ACEMS Seminar Series, The University of Queensland
Learning advantages in evolutionary games
- May 2018 Centre for Biodiversity and Conservation Science Seminar Series, The University of Queensland
Game theoretic approach to marine bacteria optimal foraging strategies in fluctuating environments
- October 2017 Seminar Series for Undergraduate Students, The University of Queensland
Talk on the introduction to game theory for undergraduate students