

# Kseniia Kurishchenko

## Personal information

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## Research interests

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- Interpretable Machine Learning, Mathematical Optimization, Fairness, Econometrics, Causality.

## Current position

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- PhD Fellow, thesis title “Interpretable and Fair Machine Learning: A Mathematical Optimization Approach”, Copenhagen Business School, expected July 2023.

## Education

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- BSc in Applied Mathematics, Peter the Great St. Petersburg Polytechnic University, June 2013.
- MSc in Applied Economics, National Research University Higher School of Economics, September 2019.
- MSc in Economics, Research Track, University of Luxembourg, September 2019.

## Articles, Working papers

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- **Interpreting Clusters via Prototype Optimization**, Emilio Carrizosa, Kseniia Kurishchenko, Alfredo Marin, Dolores Romero Morales, Omega 107 (2022) 102543.
- **On Clustering and Interpreting with Rules by Means of Mathematical Optimization**, Emilio Carrizosa, Kseniia Kurishchenko, Alfredo Marin, Dolores Romero Morales, 2022. First revision submitted on September 2022.  
[https://www.researchgate.net/publication/354208780\\_On\\_Clustering\\_and\\_Interpreting\\_with\\_Rules\\_by\\_Means\\_of\\_Mathematical\\_Optimization](https://www.researchgate.net/publication/354208780_On_Clustering_and_Interpreting_with_Rules_by_Means_of_Mathematical_Optimization)
- **Fair Random Forests via Mathematical Optimization**, Emilio Carrizosa, Kseniia Kurishchenko, Dolores Romero Morales, 2022. In progress.
- **Fair Prescriptive Random Forests**, Kseniia Kurishchenko, 2022. In progress.

## Invited and contributed talks

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- **Interpreting Clusters by Means of Mathematical Optimization**
  - PhD Seminar, University of Seville, Seville (Spain), June 2020. Online due to Corona Situation.
  - XX Latin Ibero-American Conference on Operations Research, Madrid (Spain), September 2020. Cancelled due to Corona Situation. Invited.
  - INFORMS 2020 Annual Meeting, November 2020. Online due to Corona Situation. Invited.
- **On Clustering and Interpreting with Rules by Means of Mathematical Optimization**
  - YOUNG Machine Learning NeEDS Mathematical Optimization online seminar series, February 2021.
  - 3<sup>rd</sup> IMA and OR Society Conference on Mathematics of Operational Research, Birmingham (UK), April 2021. Online due to Corona Situation. Invited.
  - 31<sup>st</sup> European Conference on Operational Research, Athens (Greece), July 2021. Online due to Corona Situation. Invited.
- **Fair Random Forests via Mathematical Optimization**

- International Conference on Operations Research, Bern (Switzerland), September 2021. Online due to Corona Situation. Invited.
- 32<sup>nd</sup> European Conference on Operational Research, Espoo (Finland), July 2022. Invited.

## Workshops, Courses, Schools

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### ➤ **PhD courses at Copenhagen Business School**

- Advanced Microeconomics, October 2019.
- Advanced Macroeconomics, November 2019.
- Advanced Econometrics, January 2020.

### ➤ **Outside Copenhagen Business School**

- Summer Supercomputing Academy, Parallel Programming Technologies OpenMP and MPI, Lomonosov Moscow State University, Moscow (Russia), June 2017.
- Workshop "International Trade and Regional Economics", HSE Center for Market Studies and Spatial Economics, Moscow (Russia), December 2017.
- Winter School of Physics and Mathematics, Moscow Institute of Physics and Technology, Moscow (Russia), February 2018.
- Women in Data Science Conference, Zurich (Switzerland), March 2018.
- Summer School of Econometrics, Graduate School of Economics, Barcelona (Spain), July 2018.
- Training in Machine Learning, EPAM, St. Petersburg (Russia), August 2018.
- Summer School in Artificial neural networks, Speech Technology Center, St. Petersburg (Russia), August 2018.
- Econometrics of Big Data, Global School Empirical Research Method, University of St. Gallen, St. Gallen (Switzerland), January 2020.
- Annual workshop on Applied Optimization, Danish Operations Research Society, Copenhagen (Denmark), April 2020. Cancelled due to Corona Situation.
- The EURO PhD School "Data Driven Decision Making and Optimization", University of Seville, Seville (Spain), July 2020. Postponed to June 2022 due to Corona Situation.
- Joint ACP, ANITI, CNRS GDR IA, GDR RO International Autumn school on Combinatorial Optimization, Constraint Programming and Machine Learning, the Association for Constraint Programming, Toulouse (France), November 2020. Online due to Corona Situation.
- Missing data and multiple imputation workshop, Danish Cancer Society Research Center, Copenhagen (Denmark), March 2020. Cancelled due to Corona Situation.
- International Conference on Machine Learning (ICML), July 2020. Online due to Corona Situation.
- AIRO PhD School 2021 and 5th AIRO Young Workshop, University "Federico II" of Naples, Naples (Italia), February 2021. Online due to Corona Situation.
- Causal Machine Learning, University of Copenhagen, October 2021.

## Teaching

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- **Applied Econometrics**, Teaching Assistant, Copenhagen Business School, fall semester 2020.
- **Data Science: Data Driven Decision Making**, Teaching Assistant, Copenhagen Business School, fall semester 2020.
- **Mathematical Optimization: Models, Methods and Applications**, Teaching Assistant, Copenhagen Business School, fall semester 2020.
- **Data Science: Data Driven Decision Making**, Teaching Assistant, Copenhagen Business School, fall semester 2021.

## Professional service

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- **Machine Learning NeEDS Mathematical Optimization online seminar series**, <https://congreso.us.es/mlneedsmo/>, Co-organizer, January 2021 – March 2022.
- **32<sup>nd</sup> European Conference on Operational Research**, Espoo (Finland), Co-organizer of the stream “Machine Learning and Mathematical Optimization”, July 2022.
- Early Stage Researcher Representative of the Steering Board of the H2020 Marie Skłodowska-Curie Program Research and Innovation Staff Exchange Network of European Data Scientists project (NeEDS), Ref. 822214, 1 October 2022-to present.

## Grants, Research projects

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- Early Stage Researcher at the H2020 Marie Skłodowska-Curie Program Research and Innovation Staff Exchange Network of European Data Scientists project (NeEDS), Ref. 822214, 1 January 2019 – 31 October 2024.

## Research stays

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- **University of Seville**, with Prof. Emilio Carrizosa, 1-5 December 2019.
- **University of Seville**, with Prof. Emilio Carrizosa, 31 October - 6 December 2022.

## Work experience

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- Assistant data analyst, COMCON (Market and Media Research), August 2014 to May 2015.
- Intern-researcher, Center of Market Studies and Spatial Economics, Higher School of Economics, November 2017 to July 2019.
- Assistant Study and Programme Administrator, University of Luxembourg, November 2018 to July 2019.

## Computational skills

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- C, C++, Gurobi, Mathematica, Matlab, Python, R, SPSS, Stata.