Stratis Tsirtsis

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https://stsirtsis.github.io

RESEARCH INTERESTS

Causality — Incentives — Fairness — Explainability
in Machine Learning & Decision Making

EDUCATION

Ph.D. in Computer Science   **9/2019 - Now**
Max Planck Institute for Software Systems (MPI-SWS) &
University of Kaiserslautern-Landau (RPTU), Kaiserslautern, Germany
Thesis: Strategic and Counterfactual Reasoning in AI-assisted Decision Making
Advisor: Manuel Gomez-Rodriguez
Spent spring quarter 2023 at Stanford University

Diploma in Electrical & Computer Engineering   **9/2013 - 3/2019**
National Technical University of Athens, Athens, Greece, *Grade: 8.5/10*
Thesis: Recommender Systems for Orienteering Problems
Advisor: Dimitris Fotakis

PROFESSIONAL EXPERIENCE

AI Research Scientist Intern   **8/2023 - 11/2023**
Meta AI (FAIR), Paris, France

Doctoral Researcher   **9/2019 - Now**
Max Planck Institute for Software Systems, Kaiserslautern, Germany

Research Engineering Intern   **9/2018 - 11/2018**
National Centre for Scientific Research "Demokritos", Athens, Greece

PUBLICATIONS

(∗): equal contribution
(A): alphabetical ordering

Journals

1. **Optimal Decision Making Under Strategic Behavior**
   Management Science, September 2023
   Stratis Tsirtsis∗, Behzad Tabibian∗, Moein Khajehnejad∗, Adish Singla, Bernhard Schölkopf and Manuel Gomez-Rodriguez

2. **Quantifying the Effects of Contact Tracing, Testing, and Containment Measures in the Presence of Infection Hotspots**
   ACM Transactions on Spatial Algorithms and Systems (TSAS), April 2022
   Lars Lorch, Heiner Kremer, William Trouleau, **Stratis Tsirtsis**, Aron Szanto, Bernhard Schölkopf and Manuel Gomez-Rodriguez

3. **Pooled Testing of Traced Contacts Under Superspreading Dynamics**
   PLOS Computational Biology, March 2022
   Stratis Tsirtsis, Abir De, Lars Lorch and Manuel Gomez-Rodriguez

Conference Proceedings

Publications in computer science conferences are archival and going through highly selective peer review.

1. **Finding Counterfactually Optimal Action Sequences in Continuous State Spaces**
   37th Conference on Neural Information Processing Systems (NeurIPS 2023)
   Stratis Tsirtsis and Manuel Gomez-Rodriguez

2. **On the Within-Group Fairness of Screening Classifiers**
   40th International Conference on Machine Learning (ICML 2023)
   Nastaran Okati, **Stratis Tsirtsis** and Manuel Gomez-Rodriguez

3. **Counterfactual Explanations in Sequential Decision Making Under Uncertainty**
   35th Conference on Neural Information Processing Systems (NeurIPS 2021)
   Stratis Tsirtsis, Abir De and Manuel Gomez-Rodriguez

4. **Bridging Machine Learning and Mechanism Design towards Algorithmic Fairness**
   4th ACM Conference on Fairness, Accountability, and Transparency (FAccT 2021)
   (A) Jessie Finocchiaro, Roland Maio, Faidra Monachou, Gourab K Patro, Manish Raghavan, Ana-Andreea Stoica and **Stratis Tsirtsis**

5. **Decisions, Counterfactual Explanations and Strategic Behavior**
   34th Conference on Neural Information Processing Systems (NeurIPS 2020)
   Stratis Tsirtsis and Manuel Gomez-Rodriguez

Workshops (non-archival)

1. **On the Within-Group Fairness of Screening Classifiers**
   2nd ACM SIGKDD Workshop on Ethical Artificial Intelligence: Methods and Applications (EAI-KDD 2023)
   Nastaran Okati, **Stratis Tsirtsis** and Manuel Gomez-Rodriguez

2. **Finding Counterfactually Optimal Action Sequences in Continuous State Spaces**
   40th International Conference on Machine Learning (ICML 2023): Workshop on Counterfactuals in Minds and Machines
   Stratis Tsirtsis and Manuel Gomez-Rodriguez

3. **Counterfactual Explanations in Sequential Decision Making Under Uncertainty**
   38th International Conference on Machine Learning (ICML 2021): Workshop on Interpretable Machine Learning in Healthcare
   Stratis Tsirtsis, Abir De and Manuel Gomez-Rodriguez

4. **Decisions, Counterfactual Explanations and Strategic Behavior**
   4th Workshop on Mechanism Design for Social Good (MD4SG 2020)
   Stratis Tsirtsis and Manuel Gomez-Rodriguez

5. **Fairness and Discrimination in Mechanism Design and Machine Learning**
   AI for Social Good Workshop (AI4SG 2020)
   (A) Jessie Finocchiaro, Roland Maio, Faidra Monachou, Gourab K Patro, Manish Raghavan, Ana-Andreea Stoica and **Stratis Tsirtsis**

TEACHING	**Teaching Assistant**	**Winter Semesters 2022 & 2023**

TEACHING

Teaching Assistant **Winter Semesters 2022 & 2023**
University of Kaiserslautern-Landau (RPTU), Kaiserslautern, Germany
Seminar: Human-Centric Machine Learning (Instructor: Manuel Gomez-Rodriguez)

Teaching Assistant **Summer Semester 2022**
Saarland University, Saarbrücken, Germany
Course: Machine Learning (Instructor: Mario Fritz)

SCIENTIFIC COMMUNITY ACTIVITIES

Workshop organizing

ICML Workshop on Counterfactuals in Minds and Machines, Hawaii, USA **7/2023**
Co-organized with Nina Corvelo Benz, Ricardo Dominguez-Olmedo, Manuel Gomez-Rodriguez, Amir-Hossein Karimi, Thorsten Joachims, Isabel Valera and Sarah Wu

ICML Workshop on Algorithmic Recourse, Virtual **7/2021**
Co-organized with Manuel Gomez-Rodriguez, Amir-Hossein Karimi, Himabindu Lakkaraju, Ana Lucic and Isabel Valera

ELLIS Human-Centric Machine Learning Workshop, Virtual **5/2021**
Co-organized with Plamen Angelov, Umang Bhatt, Manuel Gomez-Rodriguez, Himabindu Lakkaraju, Nuria Oliver and Adrian Weller

Conference reviewing

UAI 2023, ICML (2022-2023), NeurIPS (2021-2022), EAAMO 2022, FAccT 2022, AISTATS 2022, WSDM 2022, KDD 2021

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Javascript, Java, SML
Database Systems: MySQL, MongoDB
Web Development: HTML, CSS, Angular
Microcontroller Programming: Arduino
Mathematical Software: MATLAB
Typesetting: LaTeX

COMMUNITY SERVICE

MPI-SWS, PhD Student Representative		**11/2021 - 2/2023**
TEDxNTUA, Organizing Team		**6/2017 - 3/2018**
CanSat in Greece, Co-founder, Organizing Committee		**11/2015 - 4/2017**

LANGUAGES

English: Fluent
German: Basic
French: Basic
Greek: Native