F.to (Matteo Russo)

Ai fini della pubblicazione

RESEARCH INTERESTS

My main research interests lie at the intersection between Computer Science and Economics, in particular Mechanism Design, Approximation and Online Algorithms [1, 2, 3, 7]. Recently, I focused on Online Learning [4, 8, 9], and their applications in Online Markets, as well as Contract Design and Fair Division [5, 6].

EDUCATION

Sapienza Università di Roma, Class of 2025 (XXXVIII cycle)   **Rome, Italy**
Ph.D. Data Science

Advisor: Professor Stefano Leonardi.
Research Interests: Mechanism Design, Online and Approximation Algorithms, Online Learning.
Coursework: Spectral Graph Theory and Random Walks, Matching Theory and School Choice, Crypto and Incentive-based Mechanisms for Blockchain Technology.

ETH Zurich, Class of 2022   **Zurich, Switzerland**
Master's Computer Science

Coursework: Advanced Algorithms, Algorithmic Game Theory, Optimization for Data Science, Randomized Algorithms and Probabilistic Methods, High-Dimensional Statistics, Foundations of Reinforcement Learning, Reliable and Interpretable AI, Artificial Intelligence in Education, Computational Intelligence Lab, Information Security Lab, Big Data, Network Modeling.

Princeton University, Class of 2020   **Princeton, NJ, United States**
BSE Computer Science (Magna Cum Laude)

Minors: Applied and Computational Mathematics, Statistics and Machine Learning, Technology and Policy

Coursework: Theory of Algorithms, Economics and Computation, Computational Complexity Theory, Probability and Stochastic Systems, Algorithms and Data Structures, Programming Systems, Advanced Machine Learning, Applied Machine Learning, Advanced Programming Techniques, Mathematical Econometrics.

PUBLICATIONS

(1) Low-distortion clustering with ordinal and limited cardinal information
with Jakob Burkhardt, Ioannis Caragiannis, Karl Fehrs, Chris Schwiegelshohn, Sudarshan Shyam (AAAI 2024).
ArXiv: https://arxiv.org/abs/2402.04035.

(2) Prophet Inequalities via the Expected Competitive Ratio
with Tomer Ezra, Stefano Leonardi, Rebecca Reiffenhäuser, Alexandros Tsigonias-Dimitriadis (WINE 2023).
ArXiv: https://arxiv.org/abs/2207.03361.

(3) Submodular Norms with Applications to Online Facility Location and Stochastic Probing
with Kalen Patton, Sahil Singla (APPROX 2023).
Proceedings: https://d-nb.info/1300939206/34#page=437 / ArXiv: https://arxiv.org/abs/2310.04548.

(4) Fully Dynamic Online Selection through Online Contention Resolution Schemes
with Vashist Avadhanula, Andrea Celli, Riccardo Colini-Baldeschi, Stefano Leonardi (AAAI 2023).
Proceedings: https://ojs.aaai.org/index.php/AAAI/article/view/25821 / ArXiv: https://arxiv.org/abs/2301.03099.

(5) Fair Division with Interdependent Values
with Georgios Birmpas, Tomer Ezra, Stefano Leonardi (Submitted).
ArXiv: https://arxiv.org/abs/2305.14096.

(6) Contracts with Inspection
with Tomer Ezra, Stefano Leonardi (Submitted).

(7) Universal Optimization for Non-Clairvoyant Subadditive Joint Replenishment
with Tomer Ezra, Stefano Leonardi, Michał Pawłowski, William Seeun Umboh (Submitted).

(8) Online Learning with Sublinear Best-Action Queries
with Andrea Celli, Riccardo Colini-Baldeschi, Federico Fusco, Daniel Haimovich, Dima Karamshuk, Stefano Leonardi, Niek Tax (Submitted).

(9) Budget-Aware Online Learning with Feedback Graphs
with Andrea Celli, Riccardo Colini-Baldeschi, Federico Fusco, Daniel Haimovich, Dima Karamshuk, Stefano Leonardi (Submitted).

WORK EXPERIENCE

Meta Core Data Science
Research Scientist Intern, London (UK), July 2023 - November 2023

Sapienza University Rome, Department of DIAG
Research Assistant (Algorithms for Online Decision Making), Rome (Italy), December 2022 - June 2023

Sapienza University Rome, Department of DIAG
Research Assistant (Algorithms for Online Decision Making), Rome (Italy), November 2021 - October 2022

ETH Zurich, Department of MTEC
Applied Game Theory Student Assistant, Zurich (Switzerland), November 2020 - November 2021

NASA Goddard Space Flight Center
Machine Learning Intern, Greenbelt (MD, United States), Summer 2019

King Street Capital Management
Data Science Intern, New York City (NY, United States), Spring 2019

Max Planck Institute for Dynamics and Self-Organization
Applied Algorithms Intern, Gottingen (Germany), Summer 2017

Villa Santa Teresa, Istituto Rizzoli
Applied Mathematics Intern, Bagheria (Italy), Summer 2015

TEACHING EXPERIENCE

Sapienza University Rome, Bachelor in Scienze matematiche per l'intelligenza artificiale
Teaching Assistant for Tecniche di Programmazione con Laboratorio (Algorithms and Data Structures), Spring 2023.

Princeton University, Department of Computer Science
Lab Teaching Assistant, Princeton (NJ, United States), February 2018 - February 2019

ACTIVITIES

SLMath 2023. Workshop on Algorithms, Approximation, and Learning in Market and Mechanism Design, Berkeley (CA), USA. *Poster.*

ALGA 2023. Workshop on Algorithms, Learning, and Games, Scicli, Italy. *Poster and Short-talk.*

STOC 2022. Symposium on Theory of Computing, Rome, Italy. *Volunteer.*

WALE 2022. Workshop on Algorithms for Learning and Economics, Naxos, Greece. *Poster.*

OTHER ACADEMIC RESEARCH

Best-Choice Prophet Inequalities with and without Samples
Sapienza University Rome, with Prof. Stefano Leonardi, Fall 2021

Low-degree polynomials for Gaussian Graphical Models Computation-Information Gap
ETH Zurich, with Prof. David Steurer, Spring 2021

Truthful Combinatorial Auctions: Bidders with Partition Valuation Functions
Sapienza University Rome, with Prof. Stefano Leonardi, Fall 2020 - Spring 2021

Credible, Truthful, Optimal, Bounded-Round Mechanisms through Commitment Schemes
Princeton University, with Prof. Matthew S. Weinberg, Summer 2020

Exploiting Mean-Based Bidders in Symmetric Settings
Princeton University, with Prof. Mark Braverman, Spring 2020

Robust OOD Detection in Secure Open-World Learning
Princeton University, with Prof. Prateek Mittal, Spring 2019

Poisoning Attacks with Generative Adversarial Nets
Imperial College London, with Prof. Emil Lupu, Summer 2018

AWARDS

High-Honors (Magna cum Laude) in Princeton Computer Science (2020)

Gamma Kappa Alpha, The National Italian Honor Society of Princeton University (2020)

ETH Exchange Program Award Winner (2019)

Streicker International Fellows Fund Award Winner (2018)

UROP Research Program Award Winner (2018)

International Internship Program Award Winner (2017)

UWC successful candidate (2014)

AFS/Intercultura successful candidate (2014)

PROGRAMMING SKILLS

Languages: Python, Java, C, C++, Matlab, SQL, HTML, CSS, JavaScript, jQuery, AJAX, Verilog, R, React Native, AWK, x86 Assembly, PyTorch, Keras, Tensorflow

Databases: MySQL, PostgreSQL, MongoDB, Cypher, HBase, Neo4j, ROLAP

Frameworks: Django, Flask, oTree

VCS: Emacs, GitHub, Bitbucket, Visual Studio

Rome, 20/02/2024