Amedeo Roberto Esposito

i 31/08/1994

🏠 Wien, Austria
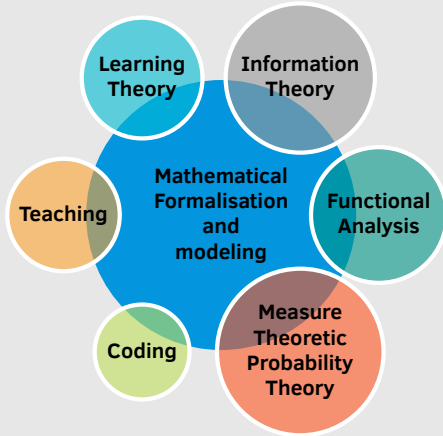
📞 +43 69010198688

✉ aesposit@ist.ac.at

https://orcid.org/0000-0002-9478-9852

Skills

Languages

Swedish

Japanese

German

French

English

Italian

Current Employment

09/2022 - ... **Postdoctoral Scholar, Institute of Science and Technology Austria (ISTA)** ISTA
Klosterneuburg, Austria
Host: Marco Mondelli

Education

2017 - 2022 **PhD, School of Computer and Communication Sciences** EPFL
Lausanne, Switzerland
Thesis Title: A Functional Perspective on Information-Measures
Supervisor: Michael Gastpar

2015 - 2017 **MSc., Computer Science** University of Salerno
Fisciano, Salerno, Italy
110/110 cum laude and distinction
Thesis Topic: Entropic Causal Inference, Supervisor: Ugo Vaccaro

Research

Aug 2021 **Generalization Error Bounds Via Rényi-, f-Divergences and Maximal Leakage**
Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa
IEEE Transactions on Information Theory Volume: 67, Issue: 8
Available Online

March 2023 **Concentration without Independence via Information Measures**
Authors: Amedeo Roberto Esposito, Marco Mondelli
Submitted to IEEE Transactions on Information Theory
Available Online
A conference version has been accepted at the International Symposium on Information Theory (ISIT) 2023

March 2023 **Lower-Bounds on the Bayesian Risk Via Information Measures**
Authors: Amedeo Roberto Esposito, Adrien Vandenbroucque, Michael Gastpar
Submitted to Journal on Machine Learning Research (JMLR)
Available Online

Feb 2023 **Asymptotically Optimal Generalization Error Bounds for Noisy, Iterative Algorithms**
Authors: Ibrahim issa, Amedeo Roberto Esposito, Michael Gastpar
Accepted for presentation at Annual Conference on Learning Theory (COLT) 2023
Available Online

Jul 2022 **From Generalisation Error to Transportation-cost Inequalities and Back**
Authors: Amedeo Roberto Esposito, Michael Gastpar
International Symposium on Information Theory 2022 - Helsinki
Available Online

Jul 2022 **On Sibson's α-Mutual Information**
Authors: Amedeo Roberto Esposito, Adrien Vandenbroucque, Michael Gastpar
International Symposium on Information Theory 2022 - Helsinki
Available Online

Jul 2022 **Lower-bounds on the Bayesian Risk in estimation procedures via f-Mutual Information**
Authors: Adrien Vandenbroucque, Amedeo Roberto Esposito, Michael Gastpar
International Symposium on Information Theory 2022 - Helsinki
Available Online

Jul 2022	**Towards a Standard Testing Data Set in Privacy** Authors: Amedeo Roberto Esposito Symposium on Open Data and Knowledge for a Post-Pandemic Era - UK Available Online
Jul 2021	**On conditional Sibson's α-Mutual Information** Authors: Amedeo Roberto Esposito, Diyuan Wu, Michael Gastpar International Symposium on Information Theory 2021 - Melbourne Available Online
Jul 2021	**Lower-bounds on the Bayesian Risk in estimation procedures via Sibson's α-Mutual Information** Authors: Amedeo Roberto Esposito, Michael Gastpar International Symposium on Information Theory 2021 - Melbourne Available Online
Jul 2020	**Robust Generalization via $f-$Mutual Information** Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa International Symposium on Information Theory 2020 - Los Angeles Available Online
Feb 2020	**Robust Generalization via $\alpha-$Mutual Information** Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa International Zürich Seminar, pages 96-100 Available Online
Aug 2019	**Learning and Adaptive Data Analysis via Maximal Leakage** Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa Information Theory Workshop 2019 - Visby Available Online
Jul 2019	**Strengthened Information-theoretic Bounds on the Generalization Error** Authors: Ibrahim Issa, Amedeo Roberto Esposito, Michael Gastpar International Symposium on Information Theory 2019 - Paris Available Online

Talks & Conferences

2024	**Program Committee Member for the International Conference on Mobile Learning 2024**	ML 2024
2024	**Program Committee Member for the International Workshop on Combinatorial Algorithms 2024**	IWOCA 2024
2023	**Technical Program Committee Member for the International Symposium on Information Theory 2023**	ISIT 2023
2023	**Program Commitee Member for the Workshop on Federated Learning Technologies 2023**	TheWebConf
Nov 2023	**"A functional perspective on Information Measures" at Cambridge University**	Seminar
Sep 2023	**Visiting Scientist at the Department of Computer Science in Universitá degli studi di Salerno**	
June 2023	**"A functional perspective on Information Measures" at Bocconi University**	Seminar
Apr 2023	**"Concentration without independence via Information Measures" at EPFL**	EPFL
Nov 2021	**Invited Talk at INRIA, Paris**	Group
Oct 2021	**"Information Measures, Independence and Learning" at Universidad Nacional Autónoma de México (Online)**	Seminar

Teaching

2023 - ...	**Information Theory (for Data Science)**	ISTA, Fall 2023

2017 - 2022	**Teaching Assistance**	EPFL

- Advanced information, computation, communication II ('21-'22)
- Networks Out of Control (Elements of Random Graph theory, 2018)
- Information, Computation and Communication (2018 and 2020)
- Advanced Probability and Applications (2019)
- Foundations of Data Science (2019)
- Signals and Systems (2020)

2016 - 2017	**Teaching Assistance**	University Of Salerno

- Mathematical Methods for Computer Science
- Algorithm Design
- Introduction to Algorithms and Data Structures
- Data Structures

Project Supervision

2017 - 2023	**Project Supervision**	EPFL

- Diyuan Wu, now PhD student at ISTA - "Definition and application in hypothesis testing of a new information measure" (Included in a work accepted and presented at ISIT 2021)
- Adrien Vandenbroucque, now PhD student at EPFL - "Lower bounds on the risk in distributed estimation problems" (Included in a work accepted and presented at ISIT 2022 and in a submission to JMLR)
- Lifu Jin - "Transportation-Cost and Strong Data Processing Inequalities"

Reviewing

Journals

- Entropy
- IEEE Transactions on Information Theory
- IEEE Journal on Selected Areas in Communications
- Transactions on Machine Learning Research

Conferences

- IEEE International Symposium on Information Theory (ISIT)
- IEEE Information Theory Workshop (ITW)
- Conference on Learning Theory (COLT)

Hobbies and Passions

2021 - ...	**Host of an (italian) Podcast on Science Dissemination**	Link

- I am the host of an italian podcast in which I talk about science. The topics range from basic neuroscience (neuroplasticity, influence of the neurotransmitters on behaviour, etc.), to math, basic biology, psychiatry, nutrition, etc. One of the purposes is to get people closer to science by presenting the scientific literature in a simple and accessible way. Another purpose is to increase the visibility of local scientists via interviews. This provides a platform in which experts can talk about the fields they work in, the research they perform and the impact that this has on society and progress.