Luciano Melodia

Curriculum vitae
Last update on 18th April 2022.

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Gebbertstraße 95, 91058 Erlangen
Born on 27.03.1994
Bavaria, Germany

EDUCATION

2021–on, B.Sc.	Bachelor of Science Mathematics, Computer Science, FAU Erlangen-Nürnberg.
2018–21	Graduate Program in Computer Science, FAU Erlangen Nürnberg.
2015–18, M.A.	Master of Arts Information Science, Regensburg University.
2012–15, B.A.	Bachelor of Arts German Philology, Italian Philology,
	Bachelor of Arts Information Science, Media Informatics, Regensburg University.
2012–13	Web Developer Certificate, Rechenzentrum Regensburg University.
2012	Abitur, Albertus-Magnus-Gymnasium, Regensburg.

PROFESSIONS

2021–on	Working Student Corscience GmbH & Co. KG, Erlangen.
2020–21	Researcher Professorship for Evolutionary Data Management, FAU Erlangen-Nürnberg.
2018–21	Researcher Chair of Computer Science 6, FAU Erlangen-Nürnberg.
2020–21	Researcher Siemens Energy AG, Erlangen.
2019–20	Researcher Siemens Gas and Power GmbH & Co. KG, Erlangen.
2017–18	Data Scientist at mb Support GmbH, Regensburg.
2015–17	Working Student mb Support GmbH, Regensburg.
2014–15	Research Assistant Chair of German Linguistics, Regensburg University.
2013–14	Student assistant Chair of German Linguistics, Regensburg University.
2012–15	Chef in Event Gastronomy Apostelkeller, Regensburg.
2012–15	Staff-based Services Trademarketing Service GmbH, Salzgitter.
2012–14	Translator for Italian and English at Anatol GmbH & Co. KG, Regensburg.
2010	Compassion Project, Alten- und Pflegeheim St. Josef, Regensburg.

CONFERENCES

2022	ICLR, Virtual.
2021	ML4ITS, Bilbao, Spain.
2021	ICPR, Milano, Italy.
2020	TDA and Beyond, NeuRIPS, Vancouver, Canada.
2020	ICPMD, Kerala, India.
2020	IWCIA, Novi Sad, Serbia.
2020	ECML/PKDD, Gent, Belgium.
2019	ECML/PKDD, Würzburg, Germany.
2019	SIGMOD/PODS, Amsterdam, Netherlands.
2017	TCLS, Regensburg, Germany.
2013	(De-)S/S&SSP, Prague, Czech Republic.

LECTURES

FAU 2021	Knowledge Discovery in Databases.
FAU 2018–2021	New Technologies in Data Management.
FAU 2020	Persistent Homology in Data Analytics.
FAU 2020	Topological Data Analysis.
FAU 2019–2020	Process Oriented Information Systems.
FAU 2018–2020	Computer Science for Engineers.
FAU 2018–2019	Big Data Seminar.
FAU 2018	Conceptional Modeling.

TALKS

2021	Homological Time Series Analysis of Sensor Signals from Power Plants, ML4ITS.
2021	Homological Inference of Embedding Dimension in Neural Networks, IMTA, Milano.
2020	Simplicial Databases, Schemas and Realisations, FAU Erlangen-Nürnberg.
2020	Tools for Schema Inference, Siemens AG.
2020	Introduction to Persistent Homology, Christ Nagar College, Kerala, India.
2020	Stop Interpolation Topologically, IWCIA, Novi Sad.
2020	Homological Perspective on Data, FAU Erlangen-Nürnberg.
2019	Literature and Tools for Topological Data Analysis, Siemens AG.
2019	Topological Data Analysis in Machine Learning, FAU Erlangen-Nürnberg.
2015	The Scientific Social Network *punc.space*. Regensburg University.
2014	Brauchen mit zu und Infinitiv. Univerzita Karlova, Prague.

SERVICE

2022	Program committee, Geometrical and Topological Representation Learning, ICLR.
2020	Program committee, TDA and Beyond, NeuRIPS.
2020	Program committee, ECML/PKDD.
2019–20	Member Gesellschaft für Informatik e.V.
2017–18	Member Computational Intelligence and Machine Learning Group.
2016	Student Representative Information Science, University of Regensburg.
2020–22	Member Weng Chun Erlangen.
2011–13	Member Deutscher Alpenverein e.V.
2006–10	Member SG Walhalla Regensburg e.V.

SUPERVISION

2021, B.Sc.	D. Hahn: Classification of Sensor Signals from Power Plants.
2021, M.Sc.	C. Sauerhammer: A Classification Dashboard for Sensor Signals from Power Plants.
2021, B.Sc.	J. Schäfer: Learning Validation Models from Sensors of a Power Plant.
2020, M.Sc.	M. Seidel: Classification of Microbes using Time Series Gas Sensor Array Data.
2020, M.Sc.	M.R. Siddiqui: Extraction of Fetal and Maternal Heartbeats from ECG Signals.

PAPERS

2021, **Luciano Melodia** and Richard Lenz: Homological Time Series Analysis of Sensor Signals from Power Plants. Machine Learning for Irregular Time Series. Machine Learning and Principles and Practice of Knowledge Discovery in Databases. In Michael Kamp, Irena Koprinska, Adrien Bibal et al. (ed.): Communications in Computer and Information Science. Springer Nature, Switzerland.

2021, **Luciano Melodia** and Richard Lenz: Estimate of the Neural Network Dimension Using Algebraic Topology and Lie Theory. Image Mining. Theory and Applications VII. Pattern Recognition and Information Forensics. In Alberto Del Bimbo, Rita Cucchiara, Stan Sciaroff et al. (ed.): Lecture Notes in Computer Science. Springer Nature, Switzerland.

2020, **Luciano Melodia** and Richard Lenz: Persistent Homology as Stopping-Criterion for Voronoi Interpolation. Proceedings of the International Workshop on Combinatorial Image Analysis. In Tibor Lukić, Reneta Barneva, Valentin Brimkov et al. (ed.): Lecture Notes in Computer Science. Springer, Cham.

2018, **Luciano Melodia**: Deep Learning Schätzung zur absorbierten Strahlungsdosis für die nuklearmedizinische Diagnostik. Library of the University of Regensburg, Master Thesis in Information Science.

2015, **Luciano Melodia**: Zur Verwendung des Paradigmas brauchen mit und ohne zu mit Infinitiv. In Katešina Šichovà, Reinhard Krapp, Rössler Paul et al. (ed.): Standardvarietät des Deutschen – Fallbeispiele aus der sozialen Praxis, Logos, Berlin.

INTERESTS

Code	Python, Rust, LaTeX.
Software	GUDHI, Dionysus, Keras, Theano and Tensorflow.
Language	German, English C1, Italian C1, Polish B2 and Spanish A2.[1]
Math	Persistent Homology, Algebraic Topology.
Computer science	Topological Data Analysis, Neural Networks.
Sports	Muay Thai, Weng Chun.
Certificates	Data Visualization with ggplot II • Data Visualization with ggplot I • Deep learning in Python • Text Mining: Bag of Words • Introduction to Machine Learning • Machine Learning Toolbox • Intro to Python for Data Science • Exploratory Data Analysis • Introduction to R • Supervised learning in R: Regression • Supervised Learning in R: Classification • Credit Risk Modeling in R • Data visualization in R • Intermediate R: Practice Course • Intermediate R • Discrete Mathematics • Mathematics for Machine Learning: Linear Algebra • Mathematics for Machine Learning: Multivariate Calculus • Machine Learning from a Mathematical Viewpoint • Lie Groups • Geometry of Manifolds •The Python Mega Course: Build 10 Real World Applications • The Rust Programming Language • Evolutionary Game Theory • Introduction to Complex Analysis.

1 Language levels are self estimates according to the CEFR standard.