Luciano Melodia

Curriculum vitae
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🎮 melodia_l_1 ♂ Born on 27.03.1994
🆔 0000-0002-7584-7287 📖 Bavaria, Germany

PROFESSIONS

2024	Student assistant Algebra and Geometry, FAU[1].
2023	Student assistant Representation Theory and Operator Algebras, FAU.
2023	Chef at E-San (Isaan food), Lamai, Thailand.
2023	Mathematics and computer science tutoring, Erlangen.
2021–22	Working student Corscience GmbH & Co. KG, Erlangen.
2020–21	Researcher Professorship for Evolutionary Data Management, FAU.
2018–21	Researcher Chair of Computer Science 6, FAU.
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 at 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.

ACADEMIC WORK

Lectures

1. Exercises in Linear Algebra I (Mathematics, FAU, 2024)
2. Exercises in Topology (Mathematics, FAU, 2023)
3. Knowledge Disovery in Databases (Computer Science, FAU, 2021)
4. Persistent Homology in Data Analytics Seminar (Computer Science, FAU, 2020)
5. Topological Data Analysis Seminar (Computer Science, FAU, 2020)
6. Process Oriented Information Systems (Computer Science, FAU, 2019 – 20)
7. New Technologies in Data Management (Computer Science, FAU, 2018 – 21)
8. Computer Science for Engineers (Computer Science, FAU, 2018 – 20)
9. Conceptional Modeling (Computer Science, FAU, 2018)

Conferences

- Learning on Graphs (LOG, 2023, 2022)
- 15th International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA, 2023)
- International Conference on Learning Representations (ICLR, 2022)
- Machine Learning for Irregular Time Series (ML4ITS, 2021)
- International Conference on Pattern Recognition (ICPR, 2021)
- Topological Data Analysis and Beyong (NeuRIPS, 2020)

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1 Friedrich-Alexander University Erlangen-Nürnberg.

- International Conference on Practical Mathematical Discourse (ICPMD, 2020)
- International Workshop on Combinatorial Image Analysis (IWCIA, 2020)
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD, 2020, 2019)
- Symposium on Principles of Database Systems (SIGMOD/PODS, 2019)
- Kolloquium zum Sprachmanagement (2017)
- Destandardisierung und Standardvarietät (2013)

Service
- Reviewer Learning on Graphs (LOG, 2023, 2022)
- Reviewer International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA, 2023, 2020)
- Reviewer Geometrical and Topological Representation Learning (ICLR, 2022)
- Reviewer Topological Data Analysis and Beyond (NeuRIPS, 2021)
- Member Gesellschaft für Informatik e.V. (2019 – 20)
- Member Computational Intelligence and Machine Learning Group (2017 – 18)
- Student Representative Information Science (Regensburg University, 2016)

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

PAPERS

2021, 🔴 ⌘ **Luciano Melodia** and <u>Richard Lenz</u>: 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 <u>Michael Kamp</u>, <u>Irena Koprinska</u>, <u>Adrien Bibal</u> et al. (ed.): Communications in Computer and Information Science. Springer Nature, Switzerland.

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

2020, 🔴 ⌘ **Luciano Melodia** and <u>Richard Lenz</u>: Persistent Homology as Stopping-Criterion for Voronoi Interpolation. Proceedings of the International Workshop on Combinatorial Image Analysis. In <u>Tibor Lukić</u>, <u>Reneta Barneva</u>, <u>Valentin Brimkov</u> 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 <u>University of Regensburg</u>, <u>Master Thesis</u> in Information Science.

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

EDUCATION

2021 – 24	Bachelor of Science (B.Sc.) Mathematics, Computer Science, Friedrich-Alexander University Erlangen-Nürnberg.
2015 – 18	Master of Arts (M.A.) Information Science, Regensburg University.
2012 – 15	Bachelor of Arts (B.A.) German Philology, Italian Philology, Information Science and Media Informatics, Regensburg University.
2012 – 13	Web Developer, Rechenzentrum Regensburg University.
2012	Abitur, Albertus-Magnus-Gymnasium, Regensburg.

INTERESTS

Code	Python, Rust, LaTeX, CSS, HTML, XML, JavaScript, PHP, C#, Java.
Software	GUDHI, Dionysus, Keras, Theano and Tensorflow.
Language	German (native), English C2, Italian C2, Polish B2 and Spanish A2.[2]
Math	Homology & Cohomology, Commutative Algebra.
Computer science	Topological Data Analysis, Neural Networks.

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 •The Python Mega Course: Build 10 Real World Applications • The Rust Programming Language • Evolutionary Game Theory • Introduction to Complex Analysis.

Sports	Weng Chun Summer Camp, Bamberg, Germany (2023).
	○ ○ ○ ○ ○ ○ ○ ○ Pra Jiad in Muay Thai (2019 – 23).
	○ ○ ○ Sash in Weng Chun Kung Fu (2022).
	Member Singdum Saint Denis Kiatmoo9 Gym, Buriram, Thailand (2023).
	Win: Dave (Australia), Unanimous decision, Samui International Stadium (2023).
	Dee Day Fight Night, Koh Samui, Thailand (2023).
	Lamai Fight Night, Koh Samui, Thailand (2023).
	Member Dee Day Muay Thai Gym, Koh Samui, Thailand (2023).
	Member WMC Lamai Muay Thai Camp, Koh Samui, Thailand (2023).
	Weng Chun Teaching, Kung Fu Zentrum Erlangen, Germany (2023).
	Weng Chun Summer Camp, Bamberg, Germany (2021).
	Member Kung Fu Zentrum Erlangen, Germany (2020 – 21).
	Member Deutscher Alpenverein e.V. (2011 – 13).
	○ ○ ○ ○ Belt in Judo (2006 – 10).
	Member SG Walhalla Regensburg e.V. (2006 – 10).

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