

LUCIANO MELODIA

Mathematician & Information Scientist

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EXPERIENCE

Tutor

Friedrich-Alexander Universität

April 2023 – ongoing Erlangen

- Topology (2023, 2026), Analysis 3 (2024, 2026), Mathematics for Engineers A4 – stochastic (2025), Analysis 2 (2025), Topology and Applications (2024), Linear Algebra 1 (2024).

Working Student: Data Science

Corscience GmbH & Co. KG

Aug 2021 – Aug 2022 Erlangen

- Deep CNNs on multi-GPUs for ECG spike detection; >99% accuracy on 1M samples, 10-fold CV, 5σ ; Matrix-factorization segmentation of ECG curves; 99% IOU, 6σ .
- Residual networks for ECG curve detection; 98% IOU on 10M augmented samples, 10-fold CV, 3σ .

Staff Applied Research Scientist

Siemens Energy AG

Sept 2018 – Dez 2021 Erlangen

- A novel interpolation technique using power plant signal topology was developed for data augmentation in large-scale ML, validated on handwriting and four plants, and published at IWCI. SIML
- A novel technique to estimate parameters in hidden-layer neural networks for signal data, validated on toy datasets and four power plants, presented at ICPR, enabling 25,000€ annual savings and near-perfect accuracy. NTOPL
- A KKS classifier for power plants was built using Voronoi interpolation and Betti curves, validated on multi-year data from four plants with up to 93% accuracy, published at ECML PKDD. TwirlFlake

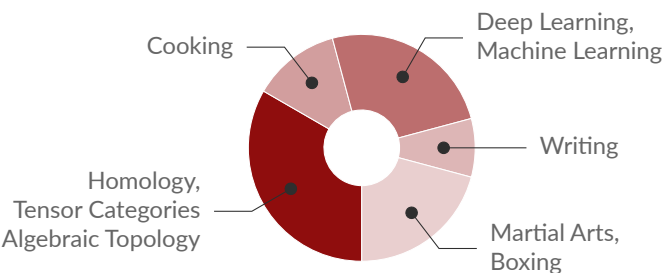
Working Student: Data Science

mb Support GmbH

June 2015 – March 2018 Regensburg

- Industrial document-digitization pipeline; 1% error-rate OCR via Google Cloud Vision + RNNs, ergonomic UI, 60M docs throughput.
- Asterisk telecommunication API in Openviva C2; 5,000 lines of PLSQL/Python.

SKILLS



AWARDS & GRANTS

Top Reviewer Award
Learning on Graphs (LOG) 2024

Oskar-Karl-Forster Fellow
Scholarship 2024

LANGUAGES

German	● ● ● ● ●
English	● ● ● ● ●
Italian	● ● ● ● ●
Polish	● ● ● ● ●
Spanish	● ● ● ● ●

EDUCATION

M.Sc. Mathematics

Friedrich-Alexander Universität

2024 – 2026 Erlangen

UCT for the Homology of Ample Groupoids

B.Sc. Mathematics

Friedrich-Alexander Universität

2021 – 2024 Erlangen

Algebraic and Topological Persistence

M.A. Information Science

Universität Regensburg

2015 – 2018 Regensburg

Deep Learning of Radiation Dose for Nuclear Medicine Diagnostics

B.A. German Philology

Universität Regensburg

2012 – 2015 Regensburg

Entwicklung einer Interpunktionsplattform mit linguistischen Modulen für das Information Retrieval