Nicola Novello

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🌐 nicolanovello.github.io   Nicola Novello

Research Interests

Responsible AI, machine unlearning, classification with label noise, mutual information estimation and maximization.

Education

University of Klagenfurt	*Oct. 2022 – Present*
PhD in Information and Communication Engineering	
Supervisors: Prof. Andrea M. Tonello, Prof. Deniz Gündüz	
University of Padua	*Oct. 2020 – July 2022*
Master's Degree in Control Systems Engineering. Final Mark: 110/110 with honors	
Supervisor: Prof. Alessandro Chiuso	
University of Padua	*Oct. 2017 – July 2020*
Bachelor's Degree in Information Engineering. Final Mark: 110/110 with honors	
Supervisor: Prof. Maria E. Valcher	

Work Experience

University of Klagenfurt — *Klagenfurt, Austria*
Teaching Assistant — *Mar. 2023 – Present*

- Machine learning for information and communication engineering
- Communication systems engineering

University of Klagenfurt — *Klagenfurt, Austria*
Project Assistant — *Apr. 2025 - Dec. 2025*
Operated research for project "Power Line Communication for Metering - Data Analytics". In collaboration with Kelag International

Princeton University — *Princeton (NJ), US*
Visiting Researcher — *Jun. 2025 - Jul. 2025*
Performed research focused on neural channel capacity estimation. Under the supervision of Prof. H. Vincent Poor, department of electrical engineering

University of Klagenfurt — *Klagenfurt, Austria*
Project Assistant — *Aug. 2022 - Feb. 2024*
Conducted administrative duties for the European project ERASMUS+ NEON (Network of competence on IoT)

Trumpf — *Vicenza, Italy*
Student Intern — *Mar. 2022 - June 2022*

- Developed deep learning algorithm in PyTorch for bending machine worth approx. € 1M
- Integration of the deep learning algorithm with existing C# infrastructure

Selected Publications

1. **Nicola Novello** and Andrea M. Tonello, "f-Divergence Based Classification: Beyond the Use of Cross-Entropy" ↗, ICML 2024

2. **Nicola Novello**, Federico Fontana, Luigi Cinque, Deniz Gundiz, and Andrea M. Tonello, "A Unified Framework for Diffusion Model Unlearning with f-Divergence" ↗, arXiv preprint arXiv:2509.21167

3. **Nicola Novello** and Andrea M. Tonello, "Robust Classification with Noisy Labels Based on Posterior Maximization" ↗, arXiv preprint arXiv:2504.06805

4. Nunzio A. Letizia, **Nicola Novello**, and Andrea M. Tonello, "Mutual Information Estimation via f-Divergence and Data Derangements" ↗, NeurIPS 2024

5. Nunzio A. Letizia, **Nicola Novello**, and Andrea M. Tonello, "Copula Density Neural Estimation" ↗, IEEE Transactions on Neural Networks and Deep Learning 2025

Other Publications

1. **Nicola Novello** and Andrea M. Tonello, "Data-Driven Grid Monitoring Under Label Noise Using Power Line Modems", (to appear in) IEEE SmartGridComm 2025

2. **Nicola Novello** and Andrea M. Tonello, "Label Noise Resistant f-Divergence Receiver for Power Line Communications" ↗, IEEE SmartGridComm 2024

3. **Nicola Novello** and Andrea M. Tonello, "Recurrent DQN for radio fingerprinting with constrained measurements collection" ↗, ICT Express (2025)

4. Frank E. Ebong, **Nicola Novello**, and Andrea M. Tonello, "Human Detection Based on Learning and Classification of Radio Scattering Parameters and Para-Hermitian Eigenvalue Decomposition" ↗, IEEE PIMRC 2024

5. **Nicola Novello** and Andrea M. Tonello, "Reinforcement learning for simplified training in fingerprinting radio localization" ↗, IEEE BalkanCom 2023

Interests and Competences

Programming and software skills: Python (PyTorch, NumPy, Scikit-Learn), Matlab, C++, Java, LaTeX, GitHub
Expertise: Machine learning, signal processing, information theory
Languages: Italian (native), English (fluent)

Academic Service

Reviewer for ICML, ICLR, NeurIPS, AAAI, IEEE Transactions on Communications, IEEE Transactions on Neural Networks and Learning Systems, IEEE VTC