

Nicola Novello

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Research Interests

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

Education

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

Work Experience

University of Klagenfurt <i>Teaching Assistant</i> - Machine learning for information and communication engineering - Communication systems engineering	<i>Klagenfurt, Austria</i> <i>Mar. 2023 – Present</i>
University of Klagenfurt <i>Project Assistant</i> Operated research for project "Power Line Communication for Metering - Data Analytics". In collaboration with Kelag International	<i>Klagenfurt, Austria</i> <i>Apr. 2025 - Dec. 2025</i>
Princeton University <i>Visiting Researcher</i> Performed research focused on neural channel capacity estimation. Under the supervision of Prof. H. Vincent Poor, department of electrical engineering	<i>Princeton (NJ), US</i> <i>Jun. 2025 - Jul. 2025</i>
University of Klagenfurt <i>Project Assistant</i> Conducted administrative duties for the European project ERASMUS+ NEON (Network of competence on IoT)	<i>Klagenfurt, Austria</i> <i>Aug. 2022 - Feb. 2024</i>
Trumpf <i>Student Intern</i> - Developed deep learning algorithm in PyTorch for bending machine worth approx. € 1M - Integration of the deep learning algorithm with existing C# infrastructure	<i>Vicenza, Italy</i> <i>Mar. 2022 - June 2022</i>

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, L^AT_EX, 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