

Nicola Novello

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Research Interests

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

Education

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|---|------------------------------|
| 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

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|---|--|
| University of Klagenfurt <i>Teaching Assistant</i> <ul style="list-style-type: none"> 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 - Present</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> <ul style="list-style-type: none"> 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** and Andrea M. Tonello, "[Robust Classification with Noisy Labels Based on Posterior Maximization](#)" [🔗](#), arXiv preprint arXiv:2504.06805
3. Nunzio A. Letizia, **Nicola Novello**, and Andrea M. Tonello, "[Mutual Information Estimation via f-Divergence and Data Derangements](#)" [🔗](#), NeurIPS 2024
4. 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, NeurIPS, AAAI, IEEE Transactions on Communications, IEEE VTC