

# Leonardo Piano



## SUMMARY

Applied AI Scientist with strong expertise in Natural Language Processing, Generative AI, and Document Intelligence. Co-author of 15+ peer-reviewed publications in top-tier AI conferences and journals. Skilled in LLMs, Knowledge Graphs construction, Information Extraction, and Computer Vision.


## EDUCATION

- **University of Cagliari** Nov 2022 - ongoing  
*PhD in Computer Science*  
◦ Focus: NLP, Information Extraction, Knowledge Representation, LLMs Fine-tuning & Benchmarking
- **University of Cagliari** Sept 2020 - Sept 2022  
*Master's Degree in Computer Science*  
◦ Thesis title: Automated generation of closed domain Knowledge Graphs with Open Information Extraction  
◦ Grade: 110/110 cum laude
- **University of Cagliari** Sept 2017 - Jul 2020  
*Bachelor's Degree in Computer Science*  
◦ Thesis title: Youtube automatic thumbnails generation with Object Detection  
◦ Grade: 102/110

## RESEARCH EXPERIENCE

- **Telenor Research & Innovation**  Mar 2025 - Sept 2025  
*Visiting Researcher*  
◦ Designed and implemented a defense system against LLM jailbreak attacks that outperformed state-of-the-art baselines.
- **University of Cagliari, Artificial Intelligence and Big Data Laboratory**  Sept 2020-Oct 2022  
*Research Assistant*  
◦ Implemented an optimization framework for online videos employing Image Captioning and NLP technologies.  
◦ Developed Computer Aided Systems:
  - \* Classification and segmentation of breast ultrasound nodules.
  - \* Segmentation of deep infiltrating endometriosis lesions from ultrasound images.

## TEACHING EXPERIENCE

- **University of Cagliari**  Sept 2024 - Feb 2025  
*Teaching assistant*  
◦ On-site support to students during laboratory lectures. Lessons and practical exercises regarding linux operating systems, shell commands, bash language, and concurrent programming using threads and processes with C language.

## SKILLS

- **Technical Skills:**
  - Programming:** Python, C, C#, Java, JavaScript
  - AI/ML:** PyTorch, TensorFlow, Transformers, LangChain, Scikit-learn
  - Databases:** SQL, SPARQL, Cypher
  - Specialized Areas:** Generative AI, Knowledge Extraction, NLP, Biomedical Image Analysis
- **Research Skills:** Research Project Management, Scientific Writing & Publication, Grant Writing
- **Languages:** Italian (Mother tongue), English (Professional proficiency)

## AWARDS, GRANTS & RECOGNITION

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### ENFIELD HORIZON

Research proposal *A Multi-Layer Defense System against LLMs Adversarial Prompt Attacks* selected for funding under the ENFIELD European Lighthouse project (co-funded by the European Union).

## ATTENDED COURSES AND WORKSHOPS

- \* ECMLPKDD 2025: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (Sept 15-19, Porto, Portugal)
- \* UMAP: 32nd ACM Conference on User Modeling, Adaptation and Personalization (Jul 1-4 2024; Cagliari, Italy)
- \* ISWS 2024 International Semantic Web Research Summer School Knowledge Graphs and Generative AI (Jun 9-15, 2024; Bertinoro, Italy)
- \* Ital-IA 2024: 4th National Conference on Artificial Intelligence, organized by CINI (May 29-30, 2024; Napoli, Italy)
- \* AISC 2021: 1st International Workshop on Artificial Intelligence Methods for Smart Cities (Nov 4, 2021; Online)

## SELECTED PUBLICATIONS

C=CONFERENCE, J=JOURNAL

- [J.1] **Leonardo Piano**, Alessia Pisu, Sandro Gabriele Tiddia, Salvatore Carta, Alessandro Giuliani, and Livio Pompianu (2025). **LLIMONIE: Large Language Instructed Model for Open Named Italian Information Extraction**. *Journal of Intelligence Information Systems*.
- [J.2] Alessandro Sebastian Podda, Riccardo Balia, Silvio Barra, Salvatore Carta, Manuela Neri, Stefano Guerriero, and **Leonardo Piano** (2024). **Multi-scale deep learning ensemble for segmentation of endometriotic lesions**. *Neural Computing and Applications*, pp. 1–14.
- [J.3] Alessandro Sebastian Podda, Riccardo Balia, Silvio Barra, Salvatore Carta, Gianni Fenu, and **Leonardo Piano** (2022). **Fully-automated deep learning pipeline for segmentation and classification of breast ultrasound images**. *Journal of Computational Science*, Vol. 63, p. 101816.
- [J.4] Salvatore Carta, Alessandro Giuliani, **Leonardo Piano**, Alessandro Sebastian Podda, and Diego Reforgiato Recupero (2022). **VSTAR: Visual Semantic Thumbnails and tAgs Revitalization**. *Expert Systems with Applications*, Vol. 193, p. 116375.
- [C.1] Arianna Graciotti, **Leonardo Piano**, Nicolas Lazzari, Enrico Daga, Rocco Tripodi, Valentina Presutti, and Livio Pompianu (2025). **KE-MHISTO: Towards a Multilingual Historical Knowledge Extraction Benchmark for Addressing the Long-Tail Problem**. In *Findings of the Association for Computational Linguistics: ACL*, pp. 20316–20339.
- [C.2] **Leonardo Piano**, Claudia Battistin, Jeriek Van den Abeele, Livio Pompianu (2025). **Small but Dangerous: Evaluating and Mitigating Jailbreak Vulnerabilities in Small Language Models**. Accepted to *7th Workshop on Machine Learning for CyberSecurity, Co-located with ECMLPKDD 2025*, (to be published).
- [C.3] Salvatore Carta, Alessandro Giuliani, Marco Manolo Manca, Mirko Marras, and **Leonardo Piano** (2025). **SardinianVoxes: A Speech Recognition Dataset for the Sardinian Languages**. In *Proceedings of Interspeech 2025*, pp. 1938–1942.
- [C.4] Salvatore Carta, Alessandro Giuliani, Marco Manolo Manca, **Leonardo Piano**, and Sandro Gabriele Tiddia (2024). **Towards Zero-shot Knowledge Graph building: Automated Schema Inference**. In *Adjunct Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization*, pp. 467–473.
- [C.5] Salvatore Carta, Alessandro Giuliani, **Leonardo Piano**, and Sandro Gabriele Tiddia (2024). **An End-to-End OCR-Free Solution For Identity Document Information Extraction**. In *Proceedings of the 28th International Conference on Knowledge-Based and Intelligent Information Engineering Systems*, pp. 453-462.
- [C.6] Salvatore Carta, Alessandro Giuliani, Marco Manolo Manca, **Leonardo Piano**, Alessandro Sebastian Podda, Livio Pompianu, Sandro Gabriele Tiddia (2024). **A zero-shot strategy for knowledge graph engineering using gpt-3.5**. In *Proceedings of the 28th International Conference on Knowledge-Based and Intelligent Information Engineering Systems*, pp. 2235-2243.

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