Simone Rossetti, PhD

Senior Deep Learning Scientist

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SUMMARY

AI Research Engineer specializing in *natural language processing* and *computer vision*. Over five years of experience leading AI teams and developing scalable, production-grade models. Published at top-tier venues and involved in *EU-funded* multidisciplinary research. Focused on bridging theory and application through *algorithmic innovation*, *model optimization*, and *scientific communication* to build robust, impactful AI systems.

PROFESSIONAL EXPERIENCE

Co-Founder & AI Research Engineer — Sep 2021 - Present

DeepPlants S.r.l.

Co-founded *DeepPlants*, an AI research startup advancing *agricultural digitalization* and *intelligent automation*. Led a team of engineers and scientists developing AI systems for *plant phenotyping* and *agri-tech automation*. Collaborated with plant biologists to integrate *domain knowledge* into model development. Co-authored *EU proposals* and white papers in *sustainable agri-tech*, and mentored researchers on *reproducible ML workflows* and *dataset curation*. Developed and trained *vision* and *language models* on *multi-GPU* setups, optimizing data pipelines for efficient large-scale training.

AI Research Fellow — Jan 2021 - Oct 2021

Sapienza Università di Roma

Research grant position in the Department of Computer, Control and Management Engineering (DIAG). Conducted research in *artificial intelligence and computer vision*, contributing to AlcorLab ongoing research projects and publications.

ICT Application Developer — Jun 2019 - Apr 2020

VIK School S.r.l.

Developed adaptive learning tools and interactive platforms compliant with accessibility standards. Collaborated with UX/UI teams to translate pedagogical requirements into user-centered design solutions.

EDUCATION & TRAINING

PhD in Engineering in Computer Science — Nov 2021 - Jan 2025

Sapienza Università di Roma • GPA: N/A • Final grade: Excellent • Supervisors: Pirri F.; Amerini I.

MSc in Artificial Intelligence and Robotics — Oct 2019 - Oct 2021

Sapienza Università di Roma • GPA: 28.2/30 • Final grade: 110/110 Cum Laude

BSc in Computer Engineering — Oct 2015 - Mar 2019

Università degli Studi Roma Tre • GPA: 23.3/30 • Final grade: 95/110

ACADEMIC CONTRIBUTIONS

- *Rossetti, S., Gatti, P., Palleschi, D.* (2025, arXiv). *CABBAGE: Comprehensive Agricultural Benchmark Backed by AI-Guided Evaluation*.
- *Rossetti, S.* (2025, UNITesi). *Reducing supervision in semantic segmentation through advancements in bayesian prior modelling*.
- *Rossetti, S., Pirri, F.* (2024, NeurIPS). *Unsupervised Hierarchy-Agnostic Segmentation: Parsing Semantic Image Structure*.
- *Rossetti, S., Samà, N., Pirri, F.* (2023, arXiv). *Removing supervision in semantic segmentation with local-global matching and area balancing*.
- *Samà, N., David, E., Rossetti, S. et al.* (2024, ICCV). *A new large dataset and a transfer learning methodology for plant phenotyping in Vertical Farms*.
- *Rossetti, S. et al.* (2023, ECCV). *Max pooling with vision transformers reconciles class and shape in weakly supervised semantic segmentation*.

LANGUAGES

- Italian - Native (C2)
- English - Fluent (C1)

TECHNICAL SKILLS

Expertise Areas

Representation learning, vision-language alignment, weakly- and self-supervised learning, semantic and instance segmentation, reinforcement learning, domain adaptation

ML & AI Frameworks

PyTorch and Lightning, TensorFlow, Hugging Face ecosystem, LangChain and LangGraph, OpenAI API, Ollama, SGLang, Scikit-learn; DDP, FSDP, Megatron-LM, DeepSpeed; model evaluation, experiment tracking and reproducibility

FMs & Architectures

LLMs families (GPT, LLaMA, Mistral, Qwen), foundational encoder-decoder (BERT, RoBERTa, T5, BART), MLLMs, RAG, in-context learning, instruction tuning, tool-use architectures; Vision Transformers (ViT, Swin, DeiT), vision-language models (OpenCLIP, SAM); Stable Diffusion; masked autoencoding (MAE) and contrastive learning (DINO, MoCo, BYOL, SwAV); efficient fine-tuning (LoRA), distillation, scalable inference

Engineering & Tools

Python, C++, Bash, SQL; Docker, Git, Linux, FastAPI, REST APIs, MCP; PostgreSQL, Redis, Nginx

VENUES

Poster Presentations

NeurIPS '24, ICCV '23, ECCV '22

EU Project Partner Liaison

EU R&I Days '25

Advanced Training

ICVSS '22, DeepLearn '22