David Nardi

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SUMMARY

AI Engineer with an Engineering Management background. Passionate about Deep Learning foundations and NLP to improve operational productivity. Experience building pipelines for large-scale research experiments. Proven ability to work in cross-functional, fast-paced, and international teams.

EDUCATION

MSc in Artificial Intelligence Engineering. University of Florence, Italy 2023 - Apr 2026

- **Prospected Thesis**: Large-scale optimization for over-parametrized deep models.
- **Activities:** Student representative also part of the AI Engineering degree review committee.
- **Relevant Coursework:** Generative AI and Multimodal AI, NLP & LLMs, Computer Vision, Reinforcement Learning, Machine Learning Security, Deep Learning, Continuous & Combinatorial Optimization, Statistics.
- **GPA:** 29/30

BSc in Management Engineering (IT Track). University of Florence, Italy 2019 - 2023

- **Thesis**: Machine learning applications to industrial quality control.

TECHNICAL SKILLS

Programming Languages: Python, R
Frameworks and Libraries: PyTorch (+ vision, distributed), HuggingFace (transformers, datasets, accelerate, gradio), Scikit-learn, Optuna, FAISS (integrated in RAG pipelines), spaCy, LaTeX
Development & Operations: Linux, Git, GitHub, Slurm, CometML, WandB, VSCode
Languages: Italian (Native), English (C1)

EXPERIENCE

AI Research Intern. Mathematics Institute, LMU Munich, Germany Sep 2025 - Now

Research focus: understanding why the Adam optimizer effectively pre-trains language models.

- Identified a research direction with insights from 10+ **deep learning optimization** papers by conducting a structured review on the SGD-Adam performance gap in LLMs pretraining.
- Engineered experimental reproducibility by successfully replicating and extending 3 core studies by building a **Python**/**PyTorch**-based pipeline with **Optuna** for HPO and **CometML** for experiment tracking.
- Enabled scalable LLMs pretraining with stable distributed runs on a **Slurm cluster (8 GPUs)** by orchestrating job submission, monitoring, automated logging, and iterative evaluation workflows.
- Tested research quality after experts' feedback from a 60+ international attendees **summer school on machine learning** by presenting current findings.

Co-Head of Business Operations. JEFLO, Junior Enterprise Florence, Italy Mar 2024 - Jun 2025

Student-run consulting network providing hands-on entrepreneurial experience through real-world projects.

- Reduced **project planning** effort by 40% by developing an internal management system. Broadened services scope with 3 new projects by training the team (10 consultants) on **dashboarding** for a total of 5 hours.
- Selected as one of 500+ participants Europe-wide for a **4-days conference** based on resume and achievements to represent the organization.

TECHNICAL PROJECTS

Slurm jobs monitor

- Engineered and deployed a real-time Slurm job-monitoring service using **Python**, **Slurm** REST API/CLI, **HuggingFace transformers** (log-summarization pipeline), enabling researchers to receive periodic updates and instant notifications on state transitions (`pending` → `running` → `failed/completed`).
- Reduced manual **cluster checks** by 60% and cut average detection time for `failed` jobs from 10 minutes to milliseconds, improving iteration speed and resource utilization across 10 active users and 50 daily jobs.

Argument Mining with NLP

- Led **fine-tuning and model selection** across 6 DistilBERT and SBERT variants for argument-component detection, achieving a 20% F1 improvement over baseline.
- Built and deployed an end-to-end **inference pipeline** processing 50+ medical research articles, enabling retrieval of high-argumentative-content exploiting custom scoring metrics.