Amedeo Carraro

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Computer Engineer specialized in Artificial Intelligence and Machine Learning, experienced in designing, optimizing, and deploying neural network pipelines and Large Language Models (LLMs). Skilled in scalable AI integration, performance optimization, and inference time reduction. Strong ability to work in interdisciplinary teams and manage complex technical projects while meeting strict objectives.

Professional Experience

Research Intern: Neural Network for Variable Star Classification, University of Padua Oct 2024 – Mar 2025

- Analyzed and implemented two hybrid architectures combining CNNs and LSTMs for variable star classification, based on in-depth review and integration of techniques from multiple state-of-the-art publications
- Achieved F1-score >95 % (peak over 99%) on ZTF balancing between accuracy and computational efficiency

Software programmer, **AppLibra s.r.l**, Thiene, Italy Sep 2021 – Dec 2021

- Managed the ERP migration from Navision to Dynamics 365 with custom development
- Built Docker-based deployment systems, reducing downtime and accelerating delivery by 50%

Data Analyst, **ULSS 7 Pedemontana**, Thiene, Italy Jun 2015 – Aug 2015

- Led the deployment of a digital signature system across the regional healthcare network, enabling real-time data capture and analysis, ensuring compliance with healthcare data governance and enhanced document security
- Automated workflows, eliminating manual errors and achieving 3–4× faster processing

Education

MSc in Computer Engineering: Artificial Intelligence and Robotics, University of Padua Sep 2022 – Mar 2025

Erasmus+ *University of Cyprus* (2024): Natural Language Processing (NLP), AI in Medicine, Entrepreneur AI

- Relevant Modules: Machine Learning, Artificial Intelligence, Computer Vision, Intelligent Robotics

Ba in Computer Engineering University of Padua Sep 2016 – Mar 2022

- Relevant Modules: Software Engineering, Databases, Operating Systems, Data Structures & Algorithms

Additional Experience/ Projects

Full Stack Developer Intern, **ITReview**, Padua, Italy Nov 2023 - Dec 2023

- Developed full-stack web using React frontend and Node.js backend, integrating RESTful APIs to deliver scalable user interfaces
- Collaborated in code reviews to elevate code readability and maintainability, implementing best practices and optimizations that reduced database response times by approximately 20%

Projects:

- **Mistral 7B Fine-tuning:** Parameter-efficient fine-tuning (LoRA) with Hugging Face for lightweight generative QA system in constrained environments, with evaluation metrics BLEU 62%, ROUGE-1 81%, METEOR 78%
- **Leukemia Cell Classifier:** Designed OpenCV-based neural network with GridSearch optimization, combining data augmentation with handcrafted feature extraction reaching F1 84.7%
- **YOLOv8 PCB Defect Detection:** Implemented a computer vision system based on YOLOv8 to automatically detect defects on printed circuit boards (PCBs), enabling reliable classification across multiple defect types
- **RANSAC Swiss House Price Prediction:** Compared Linear Regression vs. RANSAC to predict Swiss housing prices; demonstrated RANSAC robustness to outliers for more reliable fits
- **Intelligent Robotics:** Engineered autonomous navigation and object manipulation tasks for the TIAGO robot using ROS, Actionlib, Gazebo, and RViz, integrating real-time obstacle detection
- **Java ME Library Adapter:** Re-engineered a Java Collections library to run in a Java ME CLDC 1.1 environment by implementing custom adapters for core interfaces (List, Map, Iterator)

Technical Skills and Languages

- Programming Language: Python, Java, C, C++, JavaScript, C#, SQL, HTML, PHP, MATLAB
- Frameworks: TensorFlow, Numpy, Pandas, Scipy, Matplotlib, Keras, PyTorch, scikit-learn, Apache Spark, Github & MLOps
- Languages: Italian (mother tongue), English (C1) and French (A2)
- Certification: OCI AI Foundations Associate, OCI Generative AI Professional

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