Giulia Cassara

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SUMMARY

Research scientist with expertise in AI and Computer Architecture, focused on designing computer systems specifically optimized for AI workloads. Proficient in PyTorch, TensorFlow, LLVM-IR, RISC-V architecture, and OpenMP. Strong background in research, development, and implementation of cutting-edge technologies to enhance system performance and efficiency.

EXPERIENCE

Research Intern | Intel | Santa Clara | December 2022 - Present
• Profiled, identified and optimized the bottleneck of a HPC code using performance profiling and microbenchmarking with OpenMP and C++. Optimized code achieved 3x speedup.
• Development of SpGEMM algorithm in C++/OpenMP for SIMD architectures.
• Debug functional and performance issues on massively-parallel systems.
• Provided analysis and solutions for mitigating ineffective uses of architectural features and bottlenecks.
• Finding performance bottlenecks and debug issues of neural networks with XLA.

Visiting Researcher | NEC Laboratories Europe | Heidelberg, Germany | July 2021 - November 2023
• Developed an inductive learning architecture for Knowledge Graphs that perform link prediction with unseen entities using real-time knowledge infusion.
• Submitted a patent application to the USPTO.
• Developed a data mining method that retrieved in real-time over a million medical entities in a fraction of time, compared to previous methods.

ML Consultant | Self-employed | Europe | January 2018 - December 2022
• Designed and developed deep learning models for rare disease classification with 99% of precision.
• Designed and developed a natural language processing framework that provides personalized treatments by text mining the biomedical literature in less than 10 s.
• Provided more than 10 AI Education Bootcamps for italian SME.
• Developed the first AIaaS for Anti-Money-Laundering in Italy. Enhanced data processing performance by 10%.

EDUCATION

PhD in Data Science | University of Rome La Sapienza | Rome, Italy | 2024
Master of Science in Artificial Intelligence and Robotics Engineering | University of Rome La Sapienza | Rome, Italy | 2021
Bachelor of Science in Computer Science | University of Rome Tor Vergata | Rome, Italy | 2018

INVOLVEMENT

ACM Student Chapter of Rome | University of Rome, Tor Vergata | Communication Chair | January 2016 - January 2018
• Organized marketing and advertising campaigns to increase ACM's membership.
• Coordinated technical talks and conferences and networked with academic and business professionals.

Linux User Group of Rome | University of Rome Tor Vergata | Selected member | January 2013 - January 2016
• Organized Linux Install Fest which attracted over 100 attendees from the local university and community and increased student's membership by 5% every year.
• Initiated the installation and configuration of the computer science department HPC labs.

SKILLS

HPC: OpenMPI, RISC-V, Vector Programming, C++; AI Framework: LLVM, XLA, MLIR, PyTorch, C++, TensorFlow, Python, Matplotlib, Scipy, Numpy; Research: Machine Learning, Graph Mining, Graph Algorithms, Deep Learning, Teaching, Data Storytelling;