Matteo Brunello

CURRICULUM VITAE

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About

I'm a software engineer with a deep interest in systems programming, performance optimization, and understanding software from the ground up. While my recent academic and professional work has involved AI applications, I've increased my interest on low-level development using C++, Rust, and CUDA. My approach emphasizes curiosity-driven learning and a practical grasp of concepts through direct implementation. I'm currently looking to transition into roles involving systems-level development, compiler tooling, performance engineering, or GPU/parallel computing.

Education

Bachelor's Degree in Computer Science

Turin, Italy

UNIVERSITY OF TURIN — *Sep. 2017 – Dec. 2020*

Grade: 107/110

Thesis Title: *"Using Dynamic Sampling to Reduce Power Consumption in Embedded Systems"*

Relevant courses: Operating Systems | Compilers | Purely Functional Languages | Algorithms & Data Structures.

Master's Degree in Artificial Intelligence

Turin, Italy

UNIVERSITY OF TURIN — *Jan. 2021 – Jul. 2024*

Grade: 110/110 *Cum Laude*

Thesis Title: *"Integrating Anatomical Information in Weakly Supervised Contrastive Learning for Neuroimaging"*

Relevant courses: High Performance Computing | Neural Networks | Machine Learning | Computer Vision | Artificial Intelligence | Numerical Computing | Natural Language Processing.

Experience

AI Research Engineer

Turin, Italy

LEONARDO S.P.A. (ARTIFICIAL INTELLIGENCE LABORATORY) — *Sep. 2024 – Present*

- Researched and implemented deep learning models to tackle domain-specific challenges in the context of time series analysis
- Refactored an existing data preprocessing pipeline, replacing CSV-based loading with a concurrent Parquet-based system, reducing loading time by over 95%
- Designed and conducted experiments for lightweight image segmentation models to support internal prototyping and feasibility studies
- Developed Python automation programs to streamline geospatial data workflows within InSAR processing pipelines

Skills

- **Programming Languages:** C/C++ | Python | Haskell | Rust
- **AI/ML:** PyTorch, TensorFlow, scikit-learn, CUDA, NumPy
- **Tools:** Git, Linux, Bash, Jupyter, Nix, Vim
- **Languages:** Italian (*Native*), English (*Professional working proficiency*)

Personal Projects

cuLBM

GitHub link

Built a GPU accelerated Lattice-Boltzmann fluid dynamics simulator in C++/CUDA as a university project in High Performance Computing. Focused on parallel kernel design, memory alignment, and benchmarking against CPU equivalents.