

Cristian Di Pietrantonio

Computer Scientist & Software Engineer

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Work Experience

Research Fellow Feb. 2019 - present
Consiglio Nazionale delle Ricerche Rome

► In the context of Industrial Quality Control software, worked on parallelization and optimization of existing image processing and computer vision sequential algorithms using NVIDIA GPUs, programmed using CUDA C++. Obtained a $\times 39$ system speedup (so far).

► Design and implementation of data storage, retrieval and analysis solutions for an on premise, limited access system with high reliability requirements.

Software Engineering Intern Jan. 2018 - June 2018
Consiglio Nazionale delle Ricerche Rome

Worked on a GPU-accelerated implementation of a core Terastitcher subsystem, a tool for fast automatic 3D-stitching of teravoxel-sized microscopy images, which led to a 32% execution time improvement on a 200Gb-sized problem instance. Supervisor: Massimo Bernaschi.

Education

Computer Science, Master's degree 2016 - 2018
La Sapienza, 110/110 with honors Rome

Focus on Artificial Intelligence and Software Verification. My thesis work proposed a new Model Based Fault Detection technique that uses a mix of simulation algorithms and Mixed Integer Linear Programming to detect faults in cyber-physical systems.

Computer Science, Bachelor's degree 2013 - 2016
La Sapienza, 110/110 with honors Rome

Graduated with an experimental work aimed at the classification of human behaviors and interactions applied to videosurveillance systems.

Summer Schools

CPS Summer School 2019 September 2019
Università degli Studi di Sassari Alghero, Italy

The course covers all the design phases of CPSs, starting from the conception of the idea down to the definition of the final system and discusses the key challenges (including adaptivity support, modeling and security) presenting state-of-the-art tools and methods.

Extracurricular & Volunteer Experience

Foreign Student Help Desk June 2017 - June 2018
La Sapienza, Computer Science Department Rome

Private lecturer December 2018 - present
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Teaching Python and Machine Learning basics to university students.

Skills

C ★★★ Unix ★★★★★ Modelica ★★
Python 3 ★★★ L^AT_EX ★★★★★ CUDA ★
Modeling & Simulation ★★ git ★★★
C++ ★ AI & ML ★★ Optimization ★★
scikit-learn ★ nltk HADOOP
SQL ★★ UML ★ Database Design ★
OpenCL ★

★ = 1 year experience

Interests

► Artificial Intelligence and System Verification methods to model and simulate cyber-physical systems (CPS).

► Parallel computation, with focus on computing models based on GPUs.

► System programming.

Achievements & Certificates

Parallel And Scalable Machine Learning 2019
JSC @ Forschungszentrum Jülich

Successfully completed a three days intensive course on High Performance Computing (HPC) infrastructure as enabling technology for machine learning tasks.

Google Hash Code 2017 Finalist 2017
Google Paris

Member of "The Bit-les" team in the Google Hash Code programming competition that qualified for the Final, being in the top fifty among three thousand participating teams.

Languages

Italian: mother tongue.

English: fluent, professional knowledge.