Lucrezia Rambelli

Curriculum Vitae

Education

2019-202	**Particle and Astroparticle Physics, MSc**, *University of Rome La Sapienza*.
Thesis title	Novel algorithms based on AI acceleration for the High Level Trigger of the ATLAS experiment
Advisor	Prof. Stefano Giagu
2016 - 2019	**Physics, BSc**, *Roma Tre University*.
Thesis title	*Study of di-lepton resonances with the ATLAS experiment at LHC*
Advisor	Prof. Domizia Orestano
2011 - 2016	**Scientific high school diploma at "Liceo Scientifico Primo Levi" of Rome**.

Scholarships, research grants (and similar) received

2017/2018	**Borsa diritto allo studio**, *Laziodisu*, Non competitive selection, (12 months).
2017/2018	**Borsa di collaborazione**, *University of Rome 'Roma Tre', Science Departement*, Competitive selection, (12 months).
2018/2019	**Borsa diritto allo studio**, *Laziodisco*, Non competitive selection, (12 months).
2019/2020	**Premio di laurea**, *Laziodisu*, Competitive selection, (12 months).
2019/2020	**Borsa diritto allo studio**, *Laziodisco*, Non competitive selection, (12 months).

Working Experience

02/2019	**Eyes on Mars**, *Roma Tre University*, Rome, Italy.
10/2018	**European Researches' Night**, *Roma Tre University*, Rome, Italy.
6/2018	**Eyes on Jupiter**, *Roma Tre University*, Rome, Italy.

Languages

Italian	Mother tongue
English	Fluent (B2 level at University of Rome 'Roma Tre')
Spanish	Basic speaker
French	Only reading

Computer Skills

Programming languages	C, C++, Python, VHDL
Scientific software	Wolfram Alpha, ROOTCern, Wolfram Mathematica, Vitis-AI
Office Productivity	Microsoft Office, OpenOffice, LaTeX
OS	Windows, Linux

MSc exams details

FIS02 **Condensed matter physics**, *30/30*.

FIS02 **Relativistic quantum mechanics**, *29/30*.

FIS01 **Physics laboratory 1**, *29/30*.

FIS04 **Particle physics**, *30/30*.

FIS02 **Electroweak interactions**, *30/30*.

MAT07 **Mathematical physics**, *27/30*.

FIS01 **Detectors and accelerators in particle physics**, *30/30*.

FIS01 **Physics laboratory 2**, *30/30*.

FIS01 **Solid state sensors**, *27/30*.

FIS01 **Collider particle physics**, *30/30 cum laude*.

FIS02 **Weak interactions in the standard model and beyond**, *28/30*.

INF01 **Computer architecture for physics**, *26/30*.

Other physics skills

Nuclear physics: Great knowledge of detector structure and working, ability of understanding the obtained results in High Energy Physics Esperiments in a qualitative and quantitative way. Good knowledge also of trigger systems used for High Energy Physics experiments. Ability of analyzing simple datas using the ROOTCern software, of simulating dataset using Python and to build Machine Learning based algorithms for their analysis.

Other computer skills: Good knowledge of Machine Learning and Deep Learning tools for Deep Neural Networks design and training. Ability both in the context of image analysis, classification, regression and object detection tasks. Experience in Xilinix VitisAI tools for development and acceleration of Machine Learning and Deep Learning algorithms on FPGA-based co-processors. Ability to program simple machines using VHDL and to interpret assembly codes.

Rome, December 30, 2021