

**EUROPEAN
CURRICULUM VITAE
FORMAT**



PERSONAL INFORMATION

Name **PACINI ALBERTO**
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Nationality Italian
Date of birth 04/28/1997

WORK EXPERIENCE

- Dates (from – to) 11/01/2025 – 04/30/2026
• Name and address of employer University of Bologna, Department of Physics and Astronomy (DIFA) “Augusto Righi” Academy
• Type of business or sector Postdoctoral researcher
• Occupation or position held Computational physics of matter, Machine Learning for atomic potentials, Physics of Surfaces and Interfaces, Nanofriction, Mechanochemistry
• Main activities
- Dates (from – to) 09/15/2025 – 01/16/2026
• Name and address of employer University of Bologna, Department of Physics and Astronomy (DIFA) “Augusto Righi” Academy
• Type of business or sector Didactic tutor in “Materials Modelling/Theory of Solids”, bachelor’s degree in Materials Science
• Occupation or position held Computational laboratory tutor
• Main activities
- Dates (from – to) 03/05/2021 – 08/05/2022
• Name and address of employer Studio Simula: via 4 Novembre 65, 61032, Fano, Italy
• Type of business or sector Multimedia system training development
• Occupation or position held Scientific revisioner
• Main activities and responsibilities Revision of scientific contents, software developer

EDUCATION AND TRAINING

- Dates (from – to) 11/01/2022 – 10/31/2025
• Name and type of organisation providing education and training Alma Mater Studiorum University of Bologna
Department of Physics and Astronomy (DIFA) “Augusto Righi”
• Principal subjects/occupational skills covered Computational physics of matter, Density Functional Simulations, Machine Learning for atomic potentials, Physics of Surfaces and Interfaces, Nanofriction, Mechanochemistry, Nanoscience (supervisor: Prof. Mauro Ferrario)
• Title of qualification awarded PhD in Physics (public discussion 04/16/2026)
• Research thesis *Development and Application of Multi-Scale and Machine-Learning Approaches to Investigate Carbon-based Tribofilm Formation and Nano-scale Kinetic Friction*

- Dates (from – to) 11/08/2020 – 10/28/2022
- Name and type of organisation providing education and training Alma Mater Studiorum University of Bologna
Department of Physics and Astronomy (DIFA) “Augusto Righi”
- Principal subjects/occupational skills covered Thesis: “Accurate multiscale simulation of frictional interfaces by quantum mechanics/green's function molecular dynamics” (supervisor: Prof. Maria Clelia Righi)
- Title of qualification awarded Master's Degree in Material Physics and Nanoscience (MANO)
- Level in national classification Final vote: 110/110 cum laude

- Dates (from – to) 09/20/2016 – 10/16/2020
- Name and type of organisation providing education and training Alma Mater Studiorum University of Bologna
Department of Physics and Astronomy (DIFA) “Augusto Righi”
- Principal subjects/occupational skills covered Thesis: “Electromagnetic waves in continuous, linear, homogeneous and isotropic media” (Supervisor: Prof. Roberto Zucchini)
- Title of qualification awarded Bachelor's degree in physics
- Level in national classification Final vote: 107/110

- Dates (from – to) 2011 - 2016
- Name and type of organisation providing education and training “Liceo scientifico Giacomo Torelli”, Scientific high school, Fano, Italy
- Principal subjects/occupational skills covered Mathematics, physics, chemistry, software programming, human sciences
- Title of qualification awarded High school graduation
- Level in national classification Final vote: 82/100

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

ITALIAN

OTHER LANGUAGES

ENGLISH

- Reading skills Good, B2 certificate
- Writing skills Good, B2 certificate
- Verbal skills Good, B2 certificate

SPANISH

- Reading skills Scholastic
- Writing skills Scholastic
- Verbal skills Scholastic

TECHNICAL SKILLS AND COMPETENCES

PYTHON, C++, BASH, FORTRAN PROGRAMMING LANGUAGES.
 LINUX OS, MICROSOFT OFFICE PROGRAMS.
 Molecular modelling packages: Quantum Espresso, VASP, LAMMPS, Atomate2, ASE, Pymatgen
 Machine learning for Material Modelling: MACE, CHGnet, DeePMD-kit, MatterSim, MatterGen
 Molecular visualization packages: Ovito, VMD, xCrySDen, VESTA.
 Laboratory experience: Atomic Force Microscopy, transistor fabrication/characterization.

ARTISTIC SKILLS AND COMPETENCES

CLASSIC AND ELECTRIC GUITAR

DRIVING LICENCE(S)

Driving licence B

ADDITIONAL INFORMATION

PERSONAL INTEREST IN QUANTUM COMPUTATION, QUANTUM INFORMATION, NEUROSCIENCE, MOLECULAR BIOLOGY.

ANNEXES

ABROAD PERIOD AS VISITING PHD

03/01/2025 - 03/01/2025, Louvain-la-Neuve, Belgium

Supervisor: prof. Gian-Marco Rignanese at Université catholique de Louvain

Research topic: Generative modelling for computational material discovery

LIST OF ATTENDED CONFERENCES:

DEEP MODELING FOR MOLECULAR SIMULATION

06/25/2024 - 06/28/2024, Princeton, United States

Poster Session: "Advancing tribological simulations of Carbon-based lubricants with Active Learning and Machine Learning Molecular Dynamics"

MLIP

11/06/2023 - 11/10/2023, Helsinki, Finland

Workshop on Machine Learning Interatomic Potential at Aalto University

CMT@Brixen

06/05/2023 - 06/07/2023, Bressanone-Brixen, Italy

Poster session, "Accurate multiscale simulation of frictional interfaces by Quantum Mechanics/Green's Function molecular dynamics"

WTC2022 7th World Tribology Congress

07/10/2022 - 07/15/2022, Lyon, France

Speaker, "Accurate multiscale simulation of frictional interfaces by Quantum Mechanics/Green's Function molecular dynamics"

LIST OF SCIENTIFIC PUBLICATIONS:

A. PACINI, M. FERRARIO, AND M. C. RIGHI

JOURNAL OF CHEMICAL THEORY AND COMPUTATION **2025** 21 (14), 7102-7110

DOI: 10.1021/ACS.JCTC.5C00616

A. PACINI, M. FERRARIO, S. LOEHLE AND M. C. RIGHI

EUR. PHYS. J. PLUS, 139 6 (**2024**) 549

DOI: [HTTPS://DOI.ORG/10.1140/EPJP/S13360-024-05348-Z](https://doi.org/10.1140/EPJP/S13360-024-05348-Z)

Y. LONG, A. PACINI, M. FERRARIO, N. V. TRAN, S. PEETERS, B. THIEBAUT, S. LOEHLÉ, J. M. MARTIN,

M. C. RIGHI, M.-I. DE BARROS BOUCHET,

CARBON, VOLUME 228, **2024**, 119365, ISSN 0008-6223,

DOI: [HTTPS://DOI.ORG/10.1016/J.CARBON.2024.119365](https://doi.org/10.1016/J.CARBON.2024.119365).

S. KAJITA, A. PACINI, G. LOSI, N. KIKKAWA, AND M. C. RIGHI

JOURNAL OF CHEMICAL THEORY AND COMPUTATION **2023** 19 (15), 5176-5188

DOI: 10.1021/ACS.JCTC.3C00295

LIST OF GRANTED HPC PROJECTS:

AWARDED PROJECTS GRANTING COMPUTING TIME ON SUPERCOMPUTING FACILITIES

EUHPC_A04_113: 1600000 CPU HOURS ON LEONARDO BOOSTER, EUHPC, 01/02/2025

MLSILDiA: 1873520 CPU HOURS ON LEONARDO BOOSTER @ CINECA, 01/13/2025

ASIM: 80000 CPU HOURS ON LEONARDO BOOSTER @ CINECA,

GF-DIAM: 32000 CPU HOURS ON M100 @ CINECA

LIST OF RELEVANT SCHOOLS AND COURSES:

Introduction to Quantum Computing school (2023, CINECA, Bologna, Italy)

Quantum Information Processing: (prof. Tommaso Calarco, 2023, University of Bologna, Italy)