NICCOLÒ DI EUGENIO

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SUMMARY

Graduated in Physics at the University of Milano-Bicocca, I am now a PhD student at the Politecnico di Torino, where my research deals with the application of Machine Learning Potentials and DFT Methods to improve Molecular Dynamics simulations of collision cascades in complex superconducting materials. I am also implementing Time-Dependent Ginzburg-Landau simulations of vortex lattice phase transitions. My research interest include the study of Machine Learning methods, statistical mechanics and numerical modeling.

AFFILIATIONS

Politecnico di Torino, Department of Applied Science and Technology, Torino 10129, Italy

Istituto Nazionale di Fisica Nucleare, Sezione di Torino, Torino 10125, Italy

EDUCATION

PhD - Physics November 2023 - Present
Politecnico di Torino, DISAT Department, Turin, Italy
Supervisors: Prof. Francesco Laviano, Dott. Daniele Torsello
Description: Application of Machine Learning Potentials and Density Functional Theory to improve Molecular Dynamics simulations of collision cascades in superconductors. Time-Dependent Ginzburg-Landau simulations of vortex lattice phase transitions.

Master's Degree - Solid State Physics October 2020 - March 2023
University of Milano-Bicocca, Milan, Italy - **110/110 cum laude**
Dissertation Title: **Machine Learning Methods for Approximating the Microstructural Evolution in Two-Phase Systems**
Supervisors: Prof. Francesco Montalenti, Dott. Roberto Bergamaschini
Description: Use of a Convolutional Recurrent Neural Network approach to predict the microstructural evolution of two-phase systems described by a Phase Field model.

Exchange PEI - PEI - Ingénieur - Physics January 2022 - June 2022
École Polytechnique, Palaiseau, France
Description: Attended classes in both Cycle Ingénieur and Master of Science.

Bachelor's Degree - Physics October 2016 - September 2020
University of Milano-Bicocca, Milan, Italy
Dissertation Title: **Atomic Force Microscopy Characterization of Epitaxial Nanostructures**
Supervisors: Prof. Stefano Sanguinetti, Prof. Marco Bernasconi
Description: Experimental and computational analysis of SiGe samples. Statistical analysis of the Hopkins-Skellam index regarding the cluster tendency of the data set.

Diploma di Liceo Classico Europeo September 2011 - July 2016
Baccalauréat Général Littéraire (EsaBac)
Liceo Classico Europeo Melchiorre Delfico, Teramo, Italy

Ontario Secondary School Diploma September 2014 - June 2015
Nepean High School, Ottawa, Canada

CONFERENCES/WORKSHOPS/SUMMER SCHOOLS

IREF25 - Irradiation Effects on HTS for Fusion June 17th-22nd 2025
Oral Presentation: "Machine-Learning Interatomic Potentials for Radiation Damage Analysis in High-Temperature Superconductors"
Gallipoli, Italy

SuperFOx2025 - Conference on Superconductivity and Functional Oxides February 19th-21st 2025
Oral Presentation: "Radiation Damage Modeling in High-Temperature Superconducting Materials with Atomistic Simulations"
L'Aquila, Italy

RADSUM: Topical Workshopon RADiation effects in SUperconducting Materials January 15th-17th 2025
CERN, Switzerland

Summer School: "Bridging Time and Length Scales in Molecular and Materials Modelling" September 2nd-6th 2024
Poster: "Machine Learning Interatomic Potentials for Radiation Damage Analysis of High-Temperature Superconducting Materials"
Lennard-Jones Centre, University of Cambridge, UK

IREF23 - Irradiation Effects on HTS for Fusion November 12th-16th 2023
Arona, Italy

IV. AWARDS, SCHOLARSHIPS, FELLOWSHIPS AND GRANTS

PhD Scolarship in Artificial Intelligence - Politecnico di Torino November 2023
Awarded PhD scolarship inside the National Program in Artificial Intelligence, refused.

Ontario Scholar June 2015
Ontario Scholars are high school graduates in the Canadian province of Ontario who attain an average of 80% or greater in their six best Grade 12 courses.

LANGUAGES

Italian	Mother Tongue
English	C2 (Ontario Diploma)
French	B2 (Diplôme du Baccalauréat Général avec la mention bien)

TECHNICAL SKILLS

Programming Languages	Python, Bash, MATLAB, C++, C, FORTRAN
Operating Systems	Linux, Windows
Editors	LaTeX, Microsoft Office
Illustrators	InkScape, GIMP