PERSONAL INFORMATION

Andrea Formosi

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Gender male | Date and birth place 07/05/1993, Foggia | Nazionality Italian

November 2023 – ongoing

PhD student in Mechanics and Advanced Engineering Sciences (DIMSAI), in the field of Nuclear Reactor Physics, at the Department of Industrial Engineering of the University of Bologna.

Winner of the scholarship for three-year research activities on the restricted topic "calibration and validation of a bar thermomechanics code", funded by the European Union - NextGenerationEU under the National Recovery and Resilience Plan (PNRR) Mission 4, Component 2, Investment 3.3 (Ministerial Decree 117/2023) and by Newcleo S.r.l.

Characterizing fields:

Fuel Performance Code, TRANSURANUS, FEM e Monte Carlo Simulations, Nuclear Safety, Calibration, Validation.

October 2019 – May 2023

Master's Degree in Energy Engineering

LM-30 - Master's Degree in Energy and Nuclear Engineering, Alma Mater Studiorum - University of Bologna

Vote 110/110 cum Laude discussing the thesis "Study and calibration of a system for dual-energy computed tomography with Monte Carlo techniques”

Characterizing fields:

Radiation Protection, Neutronics and Plasmas, Industrial Applications of Plasmas, Modelling and Simulation Methods for Engineering, Heat Transfer and Fluid

Dynamics, Sustainable Technologies for Energy Resources.

July 2022 – February 2023

Thesis internship at the Medical Physics Unit of Santa Maria Nuova Hospital – IRCCS of Reggio Emilia and the Nuclear Engineering Laboratory of Montecuccolino (DIN), University of Bologna.

Object of study:

Evaluation by means of Monte Carlo codes of the effectiveness of dual-energy CT scan in the planning of radiotherapy treatments.

March 2022 – July 2022

Curricular internship at the Medical Physics Unit of Santa Maria Nuova Hospital – IRCCS of Reggio Emilia and the Nuclear Engineering Laboratory of Montecuccolino (DIN), University of Bologna.

Object of study:

Application of MC codes to the modeling of diagnostic and therapeutic tools.

October 2012 - October 2017

Degree in Energy Engineering

L-9 - Degree in Industrial Engineering, Alma Mater Studiorum - University of Bologna

Vote 99/110 discussing the thesis "Regulatory analysis on SEU and SEESEU qualifications".

Characterizing fields:

Energy Systems, Machines, Energy and Technical Plants, Thermodynamics, Fluid Motion and Thermokinetics, Radiation Protection.

September 2007 - July 2012

Scientific High School Diploma – vote 100/100 cum Laude

Scientific High School G.Marconi, Foggia (FG).

PERSONAL SKILLS

Native language: Italian

English: Level B2

Levels: A1/2 Basic level - B1/2 Intermediate level - C1/2 Advanced level
Common European Framework of Reference for Languages

Communication, organizational and management skills

Excellent ability to plan and organize work commitments, independently and in groups. Precision and attention to detail and good communication skills and resistance to stress. Curious and enterprising.

Soft skills:

- Achievement of soft skills "Transversal skills to be effective at work", University of Bologna;
- Achievement of soft skills "Information literacy", University of Bologna;
- Achievement of soft skills "Managing change", University of Bologna-Politecnico di Milano.

Professional skills

- Achievement of General Training for workers on safety and health (Module 1, TUS-Legislative Decree 81/08);
- Achievement of Specific Training for workers on safety and health - low risk (Module 2, TUS-Legislative Decree 81/08);
- Achievement of Specific Training for workers on safety and health - medium electrical risk (Module 3B2, TUS-Legislative Decree 81/08);
- Achievement of Specific Training for workers on safety and health - medium mechanical risk (Module 3B4, TUS-Legislative Decree 81/08);
- Achievement of Training on the protection of personal data (European Regulation 679/2016).

IT skills

- Advanced skills in the use of modeling, simulation (FEM and Monte Carlo) and graphic visualization engineering software;
- Excellent command of Microsoft Office package's tools;
- Good programming skills (C, C++, Fortran, Java, Html, Python);
- Experience in the acquisition, management and analysis of data, including statistical data;
- Excellent working skills both in Windows and Linux environments, also with the help of virtual machines;
- Practicality in the use of libraries and databases.

Software:

MATLAB, Simulink, Penelope, MCNP, VisedX, Trivac, Gnuplot, Grace, Paraview, Comsol Multiphysics, Thermoflex, AutoCAD, SolidEdge.

Certifications:

- ECDL (European Computer Driving Licence) at AICA (Italian Association for Computer Science and Automatic Calculation);
- ECDL CAD at AICA (Italian Association for Computer Science and Automatic Calculation);
- Certificate of participation in the 1st edition of the "Practical Quantum Computing School" organized by IFAB (International Foundation Big Data and Artificial Intelligence for Human Development) and CINECA.

Conferences and seminars

I attended several conferences and seminars, including international ones.

- Severe Accident Phenomenology Short Course 2021, Università di Bologna.
  Held by: Federico Rocchi et al. (ENEA-Università di Pisa);
  Date: 04/11/2021;
- XXII International Conference on Mechanics in Medicine and Biology, Università di Bologna, Scuola di Medicina, Policlinico Sant'Orsola Malpighi.
  Held by: Ivan Corazza, Pier Luca Rossi et al. (ICMMB).
  Date: 21/9/2022;
  URL: https://eventi.unibo.it/icmmb2022;
- PlasTHER Therapeutical Applications of Cold Plasmas (2nd annual meeting), COST Action, University of Bologna.
  Held by: Romolo Laurita, Cristina Canal et al.
  Date: dal 04/09/2023 al 07/09/2023;
- Nuclear Fuel Cycle Scenario Simulation, webinar.
  Held by: IAEA
  Date: 18/10/2023;
- Basis of advanced reactor physics and fuel cycle, Laboratorio di Montecuccolino, Università di Bologna.
  Held by: Eng. Giacomo Grasso (ENEA);
  Date: 10/10/2023, 20/10/2023;
- Engineering elements in the design of a reactor core, Laboratorio di Montecuccolino, Università di Bologna.
  Held by: Eng. Giacomo Grasso (ENEA);
  Date: 24/10/2023, 03/11/2023.
- Advanced Nuclear Power for a Sustainable Future, Energy Talks, Aula Magna, School of Engineering, University of Bologna.
  Held by: Eng. Francesco Carotti (Kairos Power), Eng. Francisco Garcia Ferrè (Newcleo), Eng. Lorenzo Chierici (Copenhagen Atomics).
  Date: 19/12/2023.

Conferences and seminars

- FLUKA and applications in radiation protection in LHC (CERN), Room 1.5, School of Engineering, University of Bologna.
  Held by: Eng. Angelo Infantino (CERN)
  Date: 14/03/2024.
- Open Source Codes for the Solution of Differential Equations in Engineering Applications (OpenFOAM). University of Bologna.
  Held by: Prof. Beatrice Pulvirenti
  Date: From 11/04/2024 to 09/05/2024 (12 h)
- GIF talks with industry series #2 LFR Developers: Blykalla, webinar.
  Held by: Prof. Janne Wallenius
  Date: 17/07/2024
- 2024 Frédéric Joliot/Otto Hahn Summer School on Nuclear Reactors. Innovative Approches for Streamlining the Design, Deployment and Operation of Near-term and Emerging Reactors. Aix-en-Provence, France.
  Held by: Commissariat à l'Energie Atomique (CEA) and Karlsruhe Institut of Technology (KIT).
  Date: From 21/08/2024 to 30/08/2024
- Global Symposium on Lead and Lead Alloy Cooled Nuclear Energy Science and Technology 2024 (GLANST 2024). ENEA Brasimone Research Centre, Italy.
  Held by: GIF LFR provisional SSC and ENEA, Supported by OECD/NEA.
  Date: From 30/09/2024 to 02/10/2024
- GIF talks with industry series #3 LFR Developers: Ansaldo Nucleare, webinar.
  Held by: Dr. Michele Frignani
  Date: 07/11/2024
- JHR Working Group Meeting. Online.
  Held by: VTT Techincal Research Center for Nuclear Safety of Finland.
  Date: From 13/11/2024 to 15/11/2024

Conferences and seminars

- Uncertainty Analysis for Engineers PhD Course. University of Bologna.
  Held by: Prof. Antonio Segalini, Prof. Alessandro Talamelli and Prof. Philippe Schlatter.
  Date: From 18/11/2024 to 02/12/2024 (12 h)
- GIF Education and Training series Webinar #96. LFR Development – Status and Perspectives.
  Held by: Dr. Mariano Tarantino
  Date: 05/12/2024
- Solid swelling of MOX fuel for FBR. ENEA, Bologna, Italy.
  Held by: Dr. Roberto Calabrese
  Date: 28/01/2025
- Activities performed within the REMON group of the Joint Research Centre. ENEA, Bologna, Italy.
  Held by: Antonio Guglielmelli
  Date: 17/02/2025
- The Craft of Scientific Research PhD Course. University of Bologna.
  Held by: Prof. Marco Viceconti
  Date: From 17/01/2025 to 07/03/2025 (30 h)

Pubblications

Dissertations

Formosi Andrea, Study and calibration of a dual-energy computed tomography system with Monte Carlo techniques

Institution: University of Bologna.

Formosi A (2023). Study and calibration of a dual-energy computed tomography system with Monte Carlo techniques. Thesis.

amslaurea.unibo.it/28883/

Date: 26/5/2023.

Scientific Papers:

Isolan Lorenzo, Formosi Andrea, Teodori Francesco, Botti Andrea, Bertolini Marco, Finocchiaro Domenico, Iori Mauro, Sumini Marco, A MONTE CARLO CALIBRATION APPROACH FOR A DUAL-ENERGY CT SYSTEM.

Journal: Journal of Mechanics in Medicine and Biology.

Publisher: World Scientific.

Isolan L, Formosi A, Teodori F, Botti A, Bertolini M, Finocchiaro D, Iori M, Sumini M (2023). A monte carlo calibration approach for a dual-energy ct system. Journal of Mechanics in Medicine and Biology, 2340049. https://doi.org/10.1142/S0219519423400493

www.worldscientific.com/doi/full/10.1142/S0219519423400493

Date: 15/5/2023.

Pubblications

Conference Proceedings:

Formosi Andrea, Isolan Lorenzo, Teodori Francesco, Botti Andrea, Bertolini Marco, Finocchiaro Domenico, Iori Mauro, Sumini Marco, A Monte Carlo calibration approach for a dual-energy CT system.

Collection: XXII International Conference on Mechanics in Medicine and Biology - Abstracts B.

Organization: University of Bologna.

amsacta.unibo.it/id/eprint/7024/

Date: 21/9/2022.

Category B driving license – with own car

Driving license

DATA AUTHORIZATION

I authorize the processing of my personal data pursuant to Legislative Decree 30 June 2003, n. 196 "Code regarding the protection of personal data"

First name surname