Fabio Renso · Automotive Engineer · Verona, Italy · **fabio.renso2@unibo.it**

Fabio Renso

- **Personal Interest:**Working and Research focused on Finite Elements Analysis (FEA), both Structural and Thermal analysis, applied to Internal Combustion Engines (ICE) and Electric Motors (EM), Fatigue analysis, Multibody Dynamics, Contact analysis, in particular Elastohydrodynamic Lubrication (EHL), Optimization Algorithms.

- **Soft Skills:** Critical thinking in research studies; Flexibility and Adaptability as abilities to face changes; Pro-activity in complex problem setting and solving, I have a multitasking mindset and willing to work in a team to achieve the set goals.

Work Experience

01/2022-Present **Fondazione "ITS Maker"** Modena-Italy

- *Job Description:* Teaching Fundamentals of Machine Design, Machine Design, Finite Element Modelling.
- *Job Title:* Teacher.

19-22/10/2022 **Welcome to Italy srl** Modena-Italy

- *Job Description:* Appearance in the 2023 movie *"Ferrari"* by Michael Mann.
- *Job Title:* Appearance.

10/2020-04/2021 **Engineering Department *"Enzo Ferrari"*** Modena-Italy

- *Job Description:* Development of a MATLAB tool which estimates the HTC due to oil jets on the lower surface of the piston. Development of a MATLAB tool which optimize oil jets position and inclination in order to minimize the maximum temperature of the piston through a Genetic Algorithm (GA) performed in parallel on a wide population
- *Job Title:* FEA Analyst.

Education

2021-Present **PhD - University of Bologna** Bologna

- **Automotive Engineering for Intelligent mobility**
- *Topic:* Numerical modelling of the tribological and gas-dynamic interaction between piston rings and liner in internal combustion engines.

2018-2021 **Master's Degree, MUNER** Modena

- **Advanced Automotive Engineering - Advanced Powertrain**
- *Thesis:* Development of a numerical tool for the estimation of the heat transfer coefficient at the interface between oil jets and piston in high performance engines.
- *Final Grade:* 110/110 cum Laude

2015-2018 **Bachelor's Degree, University of Modena and Reggio Emilia** Modena

- **Ingegneria Meccanica**
- *Final Grade:* 108/110

2010-2015 **High School Diploma, Liceo Scientifico *"Leonardo Da Vinci"*** Cerea

- **Scientific High School**
- *Final Grade:* 90/100

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◗◗◗ Digital Competences / Software Knowledge

FEA: **MSC Marc/Mentat, Hypermesh, Optistruct, Abaqus**

Mesh Generation, Mesh Manipulation, Thermal analysis, Structural analysis, Fatigue analysis, coupled Thermal/Structural analysis, coupledThermal/Diffusion/Structural Analysis

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Multibody: **AVL Excite**

Multibody Dynamics Simulations, Elastohydrodynamic Simulations

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CFD: **Simcenter Star-CCM+**

Computational Fluid Dynamics, Multiphase fluid treatment, Heat transfer evaluation, Moving mesh

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Programming Language: **Matlab, Fortran, Python, Shell, wxMaxima**

Mesh generation, Mesh Manipulation, Finite Element Analysis, Elastohydrodynamic Simulations, Lumped parameter models for dynamic simulations in both frequency and time domains, 1D CFD, Subroutines for Marc or Abaqus, post-processing of the results, Fatigue analysis, Numerical analysis, Control theory, and much more.

Design: **3DExperience, CATIA V5, Solidworks**

Parametric geometry modelling, Assembly modelling, Engineering drawings, Tolerance design

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Operating Systems: **Windows, Linux**

Development Tools: **Microsoft Office, Latex, Github**

◗◗◗ Language Skills

- Italian: Native Speaker
- English: C1
- Spanish: B1

◗◗◗ Publications

- F. Renso, M. Giacopini, S. G. Barbieri, and V. Mangeruga, "Oil jets piston cooling: A numerical methodology for the estimation of heat transfer coefficients and optimization of the piston temperature field through a genetic algorithm," Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, p. 095440702311619, Mar. 2023, doi: 10.1177/09544070231161909.

◗◗◗ Conferences attended

- 20th International Conference on Fracture and Damage Mechanics, 5-7 september 2022, Malaga, Spain.

◗◗◗ Courses attended, certificates

13-15/02/2023	**Uncertainty analysis for engineers** - 10 hours course given by Professor Henrik Alfredsson
13-14/02/2023	**Risorse bibliografiche e servizi bibliotecari per l'ingegneria e l'architettura** - 8 hours course
10/02/2023	**How to give a scientific presentation** - 2 hours seminar

14/12/2022	**Ferrari Auto Experience in Powertrain Electrification** - 2 hours seminar
13/12/2022	**Powertrain technology transition challenges** - 2 hours seminar
16-17/11/2022	**Alternative Fuels - A Sustainable path to engines** - 2 day workshop at Kohler Engines by SAE Naples
18-25/07/2022	**Programming with Python** - 16 hours remote course given by Professor Julien Bloino
02-11/05/2022	**Scientific Communication in English** - 20 hours course given by Professor Adrian Wallwork
04/05/2022	**Nonlinear FEA using Ansys** - 4 hours seminar given by Professor Massimiliano De Agostinis
21/03-13/04/2022	**CFD Modelling of Fuel Cells for Automotive Application** - 16 hours course given by Professor Alessandro D'Adamo
15-29/03/2022	**The basic principles of project Management** - 12 hours course given by Professor Massimo Bertolini
09-30/03/2022	**Bibliographic research, scientific writing and dissemination: tools, techniques and strategies** - 12 hours course given by Professors Simona Assirelli and Pola Michele
21/02/2022	**CFD-1D Engine Simulation** - 4 hours seminar given by Professor Enrico Mattarelli
19/01-12/02/2022	**Additive Manufacturing: from the design to the final component** - 15 hours course
30/11-02/12/2022	**Short course on DOE - Design of Experiments** - 6 hours course by Professors Michele Scagliarini and Giorgio Olmi
17/11-9/12/2021	**Open Innovation Course - Art-ER** - 4 hours course given by Professors Ilaria De Munari and Alain Marenghi
19/11/2021	**Electric Drives for green transportation systems** - 4 hours seminar given by Alessandro Brusa
01/07/2021	**Safety workers' training** - 12 hours course

❯❯❯ Contact Information

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