

CURRICULUM VITAE

PERSONAL INFORMATION

Name Luca Silvestri, PhD

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Nationality Italian.

Date of Birth 12/08/1986

Gender Male.

WORK EXPERIENCES

Date 2017 – currently being
Research fellow and **assistant professor** at University of Rome Niccolò Cusano of Rome, Via Don Carlo Gnocchi, 3, 00166 Roma RM.
Subject matter: Industrial and mechanical plants.

Main research topics: Power plants, Energy systems, Computational Fluid Dynamics (CFD), Plug-in Hybrid Vehicles, Powertrains, Energy Management, Battery Electric Vehicles, Alternative Fuel Vehicles, Electric Car, Circular Economy, Sustainability, Life Cycle Assessment (LCA), RAMS analysis, Mechanical Plant Engineering, Manufacturing, Logistics, Reliability and Maintenance, Industry 4.0, Life Cycle Assessment, Sustainability.

Date 2014 – currently being
Consultant for Consortium S.C.I.R.E. / Nu.m.i.d.i.a. Company.

Type of business or sector LCA, CFD (Computational Fluid Dynamics)
Occupation or position held simulation for engines, turbines, heat exchanger,
Main activities and responsibilities external aerodynamics, combustion.
Detailed study of numerical mesh movement.
Consultant in Energy Systems.
Organic Rankine Cycle (ORC) systems analysis.
Heat pump and refrigeration cycle analysis.
Power Plant analysis.
Numerical and experimental work in collaboration with Ferrari S.P.A and FCA Group on development of high-performance engines.
Abilitazione alla professione di Ingegnere.

PERSONAL SKILLS AND COMPETENCES

Mother tongue	Italian.
Other language	English: fluent. French: basic.
Social skills and competences	Able to work into multicultural environments by dealing with people coming from everywhere. Leadership and ability to work under pressure. Proactive and result oriented approach to work. Strong communication and interpersonal skills and positive attitude. Ability to build and nurture effective relationships internally and externally. Natural attitude to socialize with new people and get in new work teams quickly.
Organizational skills and competences	Able to coordinate multiple tasks and supervise part of a project and field personnel as needed. Flexibility and adaptability to work in a rapidly changing environment.
Technical skills and competences	Life cycle-based sustainability assessment, analytical tools for resource efficiency and circular economy models, EoL modelling, life cycle inventory databases, environmental footprints Excellent knowledge of: - LCA software: Simapro - CFD softwares: OpenFOAM, Ansys Fluent - Softwares CAD/CAE: SolidEdge, Solid-Works - Programming languages: Fortran, C++, Python - Operative systems: Linux, Windows, Mac-OSX - Altri software: Matlab and Simulink, ANSA, Labview, Paraview, Gnuplot, Office, Latex
International experience	2019-2020 - Visiting Post Doc research (six months) under the supervision of Univ.-Prof. Dr.-Ing. Marzia Traverso at Institute of Sustainability in Civil Engineering (INaB) at RWTH Aachen University . Lectures followed: 2017 - "Turbomachinery" at Peter the Great Saint-Petersburg Polytechnic University 2016 - "Fluids under Pressure" at Institute of Mathematics of the Academy of Sciences of Czech Republic 2015 - "Introduction to Computational Fluid Dynamics" and "Advanced Computational Fluid Dynamics" at Von Karman Institute of Bruxelles

EDUCATION AND TRAINING

Date	2014 – 2017
Name and type of organisation providing education and training	University: Rome Tor Vergata PhD in ‘Design and Industrial Manufacturing Engineering’ Modeling and Experimental research activity for energy systems components. CFD Case studies. Assistant professor in Energy systems at University of Rome Tor Vergata.
Supervisor	Prof. Eng. Gino Bella (Full professor).
Date	2010 - 2013
Name and type of organisation providing education and training	University: RomaTre Master’s degree in mechanical engineering (110/110 cum laude).
Skills covered	Excellent in fluid-dynamics, hydrodynamics, thermodynamics, engines (for industrial and aeronautical applications), production processes, material’s corrosion and protection systems, electric machines, compressors, turbines, energy systems. Conventional power plants, power regulation, turbomachines design, Renewable energy devices and sources: hydro, solar, wind. Nuclear power plants development and operations. Nuclear power plants safety. Oil and gas engineering. Electrical Machines and Industrial Electronics.
Dissertation Supervisor	Multidimensional study of a GDI engine spray Prof. Eng. Gino Bella (fluid machines).
Date	2006 – 2010
Name and type of organisation providing education and training	University: RomaTre. Bachelor’s degree in mechanical engineering.
Skills covered	Mathematics, Physics, Theory of Structure, Solid and Fluid Mechanics, Informatics, Chemistry, Materials Science, Thermal and Fluid Machines, Internal Combustion Engine.
Dissertation Supervisor	Aerodynamic characterization of low-speed flow with PIV technique. Prof.Eng. Roberto Camussi (fluid dynamics).
Date	2000 – 2005
Name and type of organisation providing education and training	High school attended: Liceo Classico Gregorio da Catino.

Principal subjects High school studies: classical studies.

Main scientific publications:

2021	Silvestri C., Silvestri L., Forcina A., Di Bona G., Falcone D.	<i>Green Chemistry contribution towards more equitable global sustainability and greater Circular Economy: A systematic literature review</i>	<i>Journal of Cleaner Production</i>
2021	Silvestri L., Forcina A., Silvestri C., Traverso M.	<i>Circularity potential of rare earths for sustainable mobility: A literature review and future prospects</i>	<i>Journal of Cleaner Production</i>
2021	Silvestri L., Palumbo E., Traverso M., Forcina A.	<i>A comparative LCA as a tool for evaluating existing Best Available Techniques (BATs) in facing bricks manufacturing and more eco-sustainable coating solutions</i>	<i>Journal of Life Cycle Assessment</i>
2020	Silvestri L.	<i>CFD modeling in Industry 4.0: new perspectives for smart factories</i>	<i>ISM 2020 Conference</i>
2020	Silvestri L., Forcina A., Introna V., Santolamazza A., Cesarotti V.	<i>Maintenance transformation through Industry 4.0 technologies: A systematic literature review</i>	<i>Computers in Industry</i>
2020	Silvestri L.	<i>CFD modeling in Industry 4.0: new perspectives for smart factories</i>	<i>ISM 2020 Conference</i>
2020	Silvestri L., Forcina A., Arcese G., Bella G.	<i>Recycling technologies of nickel–metal hydride batteries: an LCA based analysis</i>	<i>Journal of Cleaner Production</i>
2020	Di Bona, G., Forcina, A., Falcone, D., Silvestri, L.	<i>Critical risks method (CRM): A new safety allocation approach for a critical infrastructure</i>	<i>Sustainability (Switzerland)</i>
2020	Silvestri, L., Forcina, A., Silvestri, C., Ioppolo, G.	<i>Life cycle assessment of sanitaryware production: A case study in Italy</i>	<i>Journal of Cleaner Production</i>
2020	Forcina, A., Silvestri, L., Di Bona, G., Silvestri, A.	<i>Reliability allocation methods: A systematic literature review</i>	<i>Quality and Reliability Engineering International</i>
2019	Silvestri, L., Forcina, A., Arcese, G., Bella, G.	<i>Environmental Analysis Based on Life Cycle Assessment: An Empirical Investigation on the Conventional and Hybrid Powertrain</i>	<i>SAE Technical Papers</i>
2018	Silvestri, L., Falcone, D., Belfiore, G.	<i>Guidelines for reliability allocation methods</i>	<i>17th International Conference on Modeling and Applied Simulation, MAS 2018</i>
2018	Belfiore, G., Falcone, D., Silvestri, L.	<i>Assembly line balancing techniques: Literature review of deterministic and stochastic methodologies</i>	<i>17th International Conference on Modeling and Applied Simulation, MAS 2018</i>

2018	<i>Krastev, V.K., Silvestri, L., Bella, G.</i>	<i>Effects of Turbulence Modeling and Grid Quality on the Zonal URANS/LES Simulation of Static and Reciprocating Engine-Like Geometries</i>	<i>SAE International Journal of Engines</i>
2017	<i>Krastev, V.K., Silvestri, L., Falcucci, G.</i>	<i>A modified version of the RNG $k-\epsilon$ turbulence model for the scale-resolving simulation of internal combustion engines</i>	<i>Energies</i>
2017	<i>Krastev, V.K., Silvestri, L., Falcucci, G., Bella, G.</i>	<i>A Zonal-LES Study of Steady and Reciprocating Engine-Like Flows Using a Modified Two-Equation des Turbulence Model</i>	<i>SAE Technical Papers</i>
2016	<i>De Santis, M., Agnelli, S., Silvestri, L., Di Ilio, G., Giannini, O.</i>	<i>Characterization of the powertrain components for a hybrid quadricycle</i>	<i>AIP Conference Proceedings</i>