## **Curriculum Vitae**



## ABOUT ME

Dynamic, innovative, performance-driven, and highly motivated person with experience in climate modeling, data analysis, and numerical methods, an excellent problem solver and team player with effective management and leadership qualities, seeking a research position in a reputed organization to utilize my strong technical skills and professional experience

EDUCATION			
Dates	Nov 2021 – Oct 2024		
Title of qualification	Ph.D in Urban Microclimate research		
Name of organisation	University of Turin, Turin, Italy		
Research project	My Ph.D. research is in the application of weather research and forecast models (WRF) and CFD to analyze the urban microclimate, particularly the characterization of urban heat islands, the impact of heatwaves, and urban ventilation. Dissertation: <b>"Multi-Scale Urban Microclimate Modeling and Analysis for Climate Resilience"</b>		
Final thesis date	Yet to defend my thesis.		
Dates	Oct 2019 – Oct 2020		
Title of qualification awarded	2 <sup>nd</sup> Level Specializing Master		
Name of organisation	Politecnico Di Torino, Turin, Italy		
Program highlights	Study program: Space Exploration and Development Systems		
Final mark obtained	Dissertation: Titan Horizon Exploration from a Moon installed Shelter (THEMIS) In the framework of "Titan Horizon exploration from a Moon installed shelter (THEMIS)" mission, I worked as a CFD engineer dealing with spacecraft design for deep space exploration, CFD study of Entry, Decent, Landing system for Titan environment, Drones and hot air balloon design for Titan environment 98.7/110 (26.8/30)		
Dates	Oct 2013 Lupe 2015		
Title of qualification awarded	Master of Engineering and Technology in Mechanical Engineering		
Nome of organization	Covernment Engineering College Thrigger India		
Dre grow highlights	Study and group Internal Combustion Engines and Turk smoothingry		
Program nigniignts	Study program: Internal Comoustion Engines and Turbomachinery		
Final mark obtained	Dissertation: CFD Simulation of Solar Hybrid Photovoltaic Thermal Air Collector 8.37/10 (First class with Distinction)		
Dates	Sept 2008 – July 2012		
Title of qualification awarded	Bachelor of Engineering and Technology in Mechanical Engineering		
Name of organisation	SCT college of engineering, Trivandrum, India		
Program highlights	Study Program: Mechanical Engineering – Automobile stream		
Final mark obtained	Dissertation: Study of Heat Transfer Enhancement Techniques on Concentric Tube Heat Exchanger 6.69/10 (First class)		

Internships		
Dates	March 2024 - June 2024	
Name of firm	Ecole Centrale De Lyon, Lyon, France	
Type of employment	Urban Climate Research Intern	
	I engaged in collaboration with researchers from Ecole Centrale De Lyon and developed an automated WRF-CFD coupling framework to accurately predict pedestrian-level wind speed and direction in urban environment	
Dates	June 2020 - July 2020	
Name of firm	ISAE- Supaero   CNES, France	
Type of employment	Aerospace research Intern	
Dates	Mar 2020 - May 2020	
Name of firm	Altec spa	
Type of employment	Aerospace research Intern	
Dates	May 2014	
Name of firm	Travancore Cements Ltd May 2014	
Type of employment	Energy audit Intern	

Work Experience		
Dates	Feb-10-2025 - present	
Name and address of the firm	Institute of atmospheric sciences and climate (ISAC), CNR, Torino	
Type of employment	Assegno Di Ricerca	
Main activities and responsibilities	Responsible for urban microclimate modelling and analysis using the PALM model as a part of the Urban Intelligence Science Hub for City Network (UISH) project	
Dates	Aug-16-2018 – Nov-30-2019	
Name and address of the firm	Naval Science & Technological Laboratory under Defence Research and Development Organization, Ministry of Defence, Govt of India	
Type of employment	Research fellow	
Main activities and responsibilities	My task includes fluid dynamic design and optimization of high speed underwater bodies (Experimentation and simulation), CFD study of autonomous water drone, design of advanced lightweight torpedoes including CFD analysis of torpedo launch from launch tube to determine muzzle velocity, and other hydrodynamic studies	
Dates	Aug-14-2017 – Aug-14-2018	
Name and address of the firm	Defence Research and Development Laboratory under Defence Research and Development Organization, Ministry of Defence, Govt of India	
Type of employment	Research Assistant	
Main activities and responsibilities	I worked at the Advanced Naval System Program under DRDL and dealt with design and analysis of sub-systems of submarine-launched ballistic missiles which includes design of sealed joints for high pressure systems, pressure and temperature response of pneumatic systems, CFD study on stabilizer fins for the stability of missile	
Dates	Jul-7-2015 – Jul-28-2017	
Name and address of the firm	Jyothi Engineering College affiliated under Kerala Technological University	
Type of employment	Assistant Professor	
Main activities and responsibilities	Handled Subjects: Thermodynamics, Fluid Mechanics, Compressible fluid flow, Heat Transfer, Renewable Energy Projects handled mainly in the areas of Fluid mechanics and heat transfer	
Dates	Aug-26-2012 – Sep-20-2013	
Name and address of the firm	iCADsolutions, Thrissur, Kerala	
Type of employment	CAD Engineer	

Voluntary Research Collaborations				
Dates	July 2022 - Present			
Name of firm	TEAMx International Research Initiative			
Type of employment	Climate Simulation			
	I engaged in collaboration with researchers from diverse universities across Europe as part of the 'Multi-scale Transport and Exchange Processes in the Atmosphere Over Mountains' theme			
Grants and Awards				
Title	Young Scientist Conference Award 2024- NNM, Copenhagen			
Awarded by	European Meteorological Society			
Title	MS Young Scientist Award 2023 - EMS annual meeting, Bratislava			
Awarded by	Solco W Tromp Foundation in association with the European Meteorological Society			
Title	Ph.D Scholarship			
Awarded by	University of Piemonte Orientale			
Title	SEEDS Scholarship			
Awarded by	Politecnico Di Torino			
Title	Junior Research Fellowship			
Awarded by	Ministry of Defence, Government of India			
Title	GATE Scholarship			
Awarded by	Ministry of Human Resource and Development, Government of India			

## **Publications and Conference Proceedings**

- 1. Pauly, Lippin, Massimo Canonico, and Enrico Ferrero. "Numerical investigation of thermal patterns and local wind circulations to characterize Urban Heat Island during a heatwave in Turin." Urban Climate 54 (2024): 101847. https://doi.org/10.1016/j.uclim.2024.101847
- Pauly, L. and Ferrero, E.: Numerical Experimentation to Study the Influence of Various Urban Features on Microclimate Using Different Urban Scenarios, EMS Annual Meeting 2024, Barcelona, Spain, 1–6 Sep 2024, EMS2024-210, https://doi.org/10.5194/ems2024-210, 2024.
- 3. Pauly, L. and Ferrero, E.: Impact Assessment of Heatwaves on Urban Microclimate: A Case Study in Turin, Italy, Nordic Meteorological Meeting 2024, Copenhagen, Denmark.
- Pauly, L., Ferrero, E., and Canonico, M.: Evaluating the Impact of Urbanization on Thermal Comfort in Turin: A Numerical Simulation Study, EMS Annual Meeting 2023, Bratislava, Slovakia, 4–8 Sep 2023, EMS2023-62, https://doi.org/10.5194/ems2023-62, 2023.
- 5. Giovannini, Lorenzo, et al. "A model intercomparison study of the thermally-driven wind system in an alpine valley." 36th International Conference on Alpine Meteorology (ICAM 2023). ETH Zurich, 2023.
- Lippin Pauly et.al "Microclimate investigation to study the behavior of urban heat islands in the city of Turin" O4.2: 9th International Conference on Meteorology and Climatology of the Mediterranean 22-24 May 2023
- Lippin Pauly et.al "Titan as a potential deep space base: environmental analysis and resources exploitation proposal" A7.2: Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physic, International Astronautical Congress (IAC) Oct 2020
- 8. Lippin Pauly et.al "Conceptual Design of Technologies for a Titan Exploration Mission" A3.5 Solar System Exploration including Ocean Worlds, International Astronautical Congress (IAC) Ooct 2020
- 9. Lippin Pauly et.al "Exploiting the lunar environment as testbed for future Titan explorations" A3.2A Moon Exploration Part 1, International Astronautical Congress (IAC) Oct 2020
- Lippin Pauly et.al "Numerical Simulation for Solar Hybrid Photovoltaic Thermal Air Collector" Procedia Technology, Volume 24, Pages 513-522, ISSN 2212-0173. 2016 <u>https://doi.org/10.1016/j.protcy.2016.05.088</u>
- Lippin Pauly et.al "Analysis of Flow over a Cylinder Fitted with Helical Strakes" Procedia Technology, July, vol 24 pp 452-460. 2016 <u>https://doi.org/10.1016/j.protcy.2016.05.062</u>
- 12. Lippin Pauly et.al "Numerical Analysis of Heat Exchanger Effectiveness Using Porous Medium" International Journal of Scientific Engineering &Research, April, vol 5, Issue7 2015

Personal skills and competencies				
Mother tongue	Malayalam			
Other languages:	-			
Skills	English	Italian		
CEFR level	C1	B1		
Social Skills and Competences	<ul> <li>Ability to adapt and collaborate within a team;</li> <li>Flexible attitude and ability to work harmoniously in an international environment with people of different nationalities and cultural backgrounds</li> <li>Able to maintain autonomy to determine future developments required in a project and make a proposal accordingly</li> </ul>			
Organizational Skills and Competences	<ul> <li>Student organiser among PhD students in sustainable development and cooperation program for the first two years</li> <li>Organiser and founding member of Indian Catholic Community in Turin, Italy</li> <li>Project manager of SEEDS team during the initial phase of Titan horizon exploration from a Moon-installed shelter (THEMIS) project</li> <li>Organizing committee member of general meetings and technical presentations during the entire SEEDS project phase</li> <li>Organizing committee member of International Conference on Material for Future (ICMF2013) organized by government engineering college, Thrissur.</li> </ul>			
High-Performance Computing skills	<ul> <li>SERVERS: LEONARI Utilized high-performan ISCRA initiative for PhI Job submission: SLRUM</li> <li>SERVER: NEWTON ( Utilized high-performan Lyon for my final stage of PhD research. S submission: SLRUM wc</li> <li>SERVER: CHAMELE Utilized high-performan Foundation for my first s</li> <li>SERVER: CHAMELE Utilized high-performan Piemonte Orientale for m</li> </ul>	<b>DO, GALILEO100 - ITALY</b> ce computing resources provided by CINECA under the D research. Software used: OpenFOAM, WRF, Python, R   I workload manager <b>Cloud - FRANCE</b> ce computing resources provided by Ecole Centrale De oftware used: Ansys Fluent, WRF, Python, QGIS   Job rkload manager <b>ON CLOUD</b> ce computing resources provided by National Science stage of PhD research. Software used: PALM, WRF, Pytho <b>ON CLOUD</b> ce computing resources provided by the University of ny preliminary stage of PhD research. Software used: WRF		
Software Skills and Competences	<ul> <li>Programming &amp; Data A EXPERT in WRF, C, Py PALM, OpenFOAM, R,</li> <li>Technical Writing: EXPERT in Latex, Over</li> <li>Operating Systems: EXPERT in UNIX, Linu</li> <li>Digital Collaboration S EXPERT in Slack, Trello</li> </ul>	Analysis: thon, Fortran 77/90, QGIS, ArcGIS, ANSYS FLUENT, SOLIDWORKS tleaf, MS Office x, Windows kills: b, Microsoft Teams, Github, Google Workspace		
REFERENCES				
Prof ENRICO FEDDI	EPO	Dr. Silvia Trini Castelli		

Prof. ENRICO FERRERO Full Professor & Scientific coordinator, Climate systems and Environmental sustainability, University of Piemonte Orientale Vercelli, Italy e: enrico.ferrero@uniupo.it Dr. Silvia Trini Castelli Institute of Atmospheric Sciences and Climate - ISAC National Research Council - CNR Corso Fiume 4 10133 - Torino, Italy S.TriniCastelli@isac.cnr.it