Lorenzo Vecchietti

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Skills

Programming: Python *(Pandas, NumPy, MatPlotLib, pyTorch, pyAnsys, fenicsX)*, C++, SQL, Bash, GitHub
CAE: Abaqus, OpenFOAM, Paraview, Ansys Fluent, Ansys Icepak, Ansys Mechanical

Honors & Awards

Ansys LLM Hackathon, *1st place*, Automate video suggestions via internal docs & YouTube comments. 2024
Ansys Best Application Engineer, Award for at the best application engineers, assigned on a quarterly base. 2024
Ansys Hackathon, *2nd place*, Automatic post-processing with AI. 2023
Alta Scuola Politecnica Scholarship, offered to the top 1% of M.S. students of Milan and Turin Politecnico. 2020
Best freshmen award, Award aimed at the best freshmen of Politecnico di Milano 2017

Experience

Senior Application Engineer, Synopsys – Milan, IT Jan. 2026 – Present
Application Engineer II, Ansys – Milan, IT Feb. 2024 – Jan. 2026
Application Engineer, Ansys – Milan, IT Sept. 2022 – Feb. 2024

- Handling 100% of application engineering for electro-thermal management problems with SimAI, Ansys Deep Learning offering.
- Used Ansys Icepak and Fluent to solve complex electro-thermal management problems. Streamlined simulation workflows, reducing manual tasks and enhancing efficiency for simulation teams.
- Primary contributor to pyAEDT, automating Ansys Electronic Desktop simulations. Increased Icepak functionality coverage from $\sim$30% to $\sim$95%, unlocking new business opportunities.
- Tasked with leveraging my pyAEDT expertise to rapidly turn around a multi-million-euro project for a top 3 EMEA client. Delivered the necessary improvements ahead of schedule.
- Led and contributed to a client project, enhancing code speed 10x through vectorization and optimized use of Lapack libraries. Independently handled key UX decisions that was key in the client's purchase positive decision. The project will become a new tool in the Ansys portfolio.

FEA Engineer, Pirelli – Milan, IT Feb. 2022 – Aug. 2022

- Tasked with simulating the complex behavior of motorsport tires across single-seater, rally, and GT championships to enhance tire performance analysis
- Introduced automation processes that reduced manual tasks, speeding up pre-processing by 3x
- Addressed longstanding HPC queuing logic issues
- Successfully field-tested a custom-made mesher

Education

Alta Scuola Politecnica – Milan, IT Sept. 2019 - Sept. 2021
Multidisciplinary and honour program created by Politecnico di Milano and Politecnico di Torino for the top 1% of students. Courses on issues, models and methods of innovation, tackled with a strong interdisciplinary perspective.
Politecnico di Milano – M.S. in aerodynamic engineering, 110/110 with honors 2021
Specializing in Turbulence, Numerical methods and Optimization Research.
Politecnico di Milano – B.S. in aerospace engineering, 110/110 with honors 2019

Extracurricular Activities

Aerodynamic & CFD Engineer Dynamis PRC – Milan, IT Sept. 2017 - Sept. 2020

- Introduced advanced simulation technique (RANS, SAS, fans, moving meshes and porous media)
- Enhanced team collaboration as I made simulations standardized, comparable and partially on cloud
- Improved design accuracy with multiple wins in FSAE design challenges
- Improved credibility with sponsors with new simulation tools (SimScale) and HPC (Lenovo) obtained

Projects

STLIMB Thesis, GitHub

- I developed a CFD code based on the immersed boundary method.
- The code proved to be 25 times faster than OpenFOAM and requires 70% less memory.