MARCO TURRINI

Engineer & Researcher | Wind Energy · Fluid Mechanics · Environmental Systems

LinkedIn: linkedin.com/in/marcoturrini | ResearchGate: researchgate.net/profile/Marco-Turrini

PROFESSIONAL SUMMARY

Experienced researcher and engineer specializing in wind energy systems, computational fluid dynamics, and machine learning applications for renewable energy. Proven track record in developing innovative solutions for wind resource assessment, wake modeling, and hybrid energy system optimization. Published researcher with expertise in atmospheric sciences, Lidar technology, and environmental impact assessment.

EDUCATION

Ph.D. in Wind Energy Engineering | Technical University (2020-2024)
Thesis: Advanced Machine Learning Methods for Wind Field Reconstruction and Forecasting

M.Sc. in Mechanical Engineering | Technical University (2018-2020)
Specialization: Fluid Mechanics and Renewable Energy Systems

KEY TECHNICAL SKILLS

Programming:	Python, MATLAB, R, C++, Julia
ML/AI:	TensorFlow, PyTorch, Gaussian Processes, Deep Learning
CFD:	WRF, OpenFOAM, ANSYS Fluent, LES, SOWFA
Wind Energy:	WindPRO, WAsP, SCADA Analysis, Lidar Processing
HPC:	Linux/Unix, HPC Clusters, AWS, Docker, Parallel Computing

SELECTED PUBLICATIONS

• M. Turrini et al., 'Machine Learning-Enhanced Adaptive Scanning Strategies for Wind Lidar Systems', Wind Energy Science, 2024

• M. Turrini et al., 'Uncertainty Quantification in Wind Resource Assessment Using Deep Learning', Applied Energy, 2023

• M. Turrini et al., 'Mesoscale-Microscale Coupling for Improved Wind Farm Wake Prediction', J. Renewable & Sustainable Energy, 2023

• M. Turrini et al., 'Ecological Impact Assessment Framework for Offshore Wind Installations', Environmental Research Letters, 2022

FEATURED PROJECTS

Adaptive Lidar Wind Field Reconstruction
Developed ML algorithms for optimizing Lidar scanning patterns with 35% improvement in critical event detection.

Wake Modeling for Large Wind Farms
Implemented LES models with hybrid CFD-ML approach, reducing computational time by 40%.

Hybrid Energy System Optimization
Designed control strategies for wind-solar-storage plants, achieving 18% increase in profitability.