

Arash Atasen

CURRICULUM VITAE

Python Software Development | Data Analysis | Applied AI

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Professional Summary

Engineer with more than 10 years of experience working with simulation and measurement data. In recent years, I have developed Python tools and automated workflows for data processing, model validation, numerical analysis, visualisation, and reporting. I have experience with Git, automated testing, and CI/CD. I am currently expanding my skills in applied machine learning and LLM integration. I would now like to use my engineering, software, and data experience in other industries.

Experience

Nov. 2019 - Feb. 2026 **Senior Loads Engineer**, *Shanghai-Electric Wind Power Group European Innovation Center*, Aarhus, Denmark

- Developed Python tools for simulation setup, simulation post-processing, model conversion, load estimation, and load extrapolation.
- Built automated workflows to process and analyse wind turbine simulation and measurement data.
- Compared simulation results with measurements using data filtering, signal alignment, statistical analysis, and visualisation.
- Used Git for version control and helped set up automated tests and CI pipelines for Python projects.
- Conducted aeroelastic modelling and design load simulations using HAWC2 and BLADED to support wind turbine design, validation, and sensitivity studies.
- Performed wind turbine stability analysis using HAWCStab2.

2016 - Nov. 2019 **Loads & Control Engineer**, *Suzlon Blade Science Center*, Vejle, Denmark

- Conducted dynamic simulations and design load calculations using FLEX5.
- Replicated field conditions in simulations to support root-cause analysis of turbine behaviour.
- Developed MATLAB-based pre/post-processing tools to automate the analysis of simulation results.
- Tuned controllers to reduce loads and improve turbine performance.

2013 - 2016 **Loads Engineer**, *OGIN Denmark ApS*, Silkeborg, Denmark

- Conducted dynamic simulations and load calculations for shrouded wind turbines using FAST/Aerodyn.
- Enhanced the FAST/AeroDyn aeroelastic code by developing and integrating new features.

2012 - 2013 **Research Assistant**, *National Laboratory for Sustainable Energy, Risø-DTU*, Roskilde, Denmark

- Designed and analysed wind turbine aerodynamics for the "Tip-Rotor" concept using HAWC2.

Education

- **Master of Science in Wind Energy Engineering**, Technical University of Denmark, Lyngby, Denmark, *Scholarship granted by VESTAS Wind Systems A/S*
- **Bachelor of Science in Aerospace Engineering**, Azad University, Science and Research Branch, Tehran, Iran

Selected Software Projects

Load-Arena	Developing a Python tool for processing and analysing engineering time series data. Implemented work includes data reading, statistical post-processing, rainflow counting, fatigue-load calculations, visualisation, and automated tests. Currently exploring structured LLM outputs and tool calling to understand how LLMs can support engineering analysis. GitHub repository
Wind-analyzer	Developed a Python tool for cleaning, filtering, aligning, and analysing measurement data from different sensor sources, including LiDAR and met mast data. The tool calculates turbulence intensity, wind shear, and wind profiles. It also produces summary statistics and visualisations. GitHub repository
Fast Load Estimator	Developed a Python tool to estimate extreme blade loads without running full aeroelastic simulations.
BLADED to HAWC2	Developed a Python workflow for converting turbine model information from BLADED to HAWC2. The tool supported model comparison and consistency checks.
Load Extrapolation	Developed and documented a load extrapolation workflow based on IEC load calculation principles. It included peak extraction, statistical fitting, long-term exceedance estimation, and uncertainty checks.

Professional Development

- Applied Machine Learning in Python (in progress)
- Statistics with Python: data visualisation, probability, and statistical interpretation
- CI/CD for data and software workflows
- Python project structure, testing, packaging, and automation
- Hands-on Introduction to Linux Commands and Shell Scripting

Technical Skills

Programming:	Python, MATLAB, Bash, Fortran
Data Analysis:	Pandas, NumPy, SciPy, basic SQL
Machine Learning:	scikit-learn fundamentals, regression, classification, train/test evaluation
LLM Integration:	Structured outputs, tool calling, Pydantic, and LLM integration through the Google Gemini and OpenAI APIs.
Visualisation:	Matplotlib, Plotly, Seaborn
Software Practices:	Git, GitHub/GitLab, pytest, CI/CD workflows, Linux
Wind turbine loads:	HAWC2, HAWCStab2, BLADED, FLEX5, FAST
Other tools:	LaTeX, SolidWorks, Microsoft Office

Publications

- *Impact of a Model Plunging Motion on Wind Tunnel Walls Pressure Fluctuations*, Conference Paper ICAS2006, 25th International Congress of the Aeronautical Sciences, Hamburg, Germany, September 2006

Languages

Persian	Mother tongue
English	Proficient user
Danish	Intermediate level

References

Thomas Buhl

Head of Advanced Load Simulation and Blades
Shanghai-Electric Wind Power Group