

Harsh S. Dhiman

AI Researcher

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TECHNICAL SKILLS

Languages: Python3, SQL, R, MATLAB

Frameworks: TensorFlow, PyTorch, PySpark, Langchain

Libraries: NumPy, Pandas, Seaborn, Scikit-learn

EXPERIENCE

Consultant-Data Scientist

Jul. 2024 – Present

Ernst & Young (EY)

Pune, India

Assistant Professor

Dec. 2022 – Jul. 2024

Symbiosis Institute of Technology, Dept. of AI & ML

Pune, India

- Teaching and research in machine learning and deep learning for core industrial applications.

Consultant

Aug 2021 - Oct 2021

Symphony IndustrialAI

Bengaluru, India

- Forecasting the remaining useful life of an asset and key process variables in a process plant (e.g., melting furnaces)
- Survey of the latest research, data preprocessing and visualization, developing and testing machine learning models in the form of Python codes
- Documenting and presenting the findings to the team.

Assistant Professor

Dec. 2019 – Nov 2022

Adani Institute of Infrastructure Engineering, Dept. of Electrical Engineering

Ahmedabad, India

- Teaching and research in machine learning and deep learning for core industrial applications.

EDUCATION

Institute of Infrastructure Technology Research and Management (IITRAM)

Ahmedabad, India

Doctor of Philosophy, Electrical Engg.

2017 - 2020

The Maharaja Sayajirao University of Baroda

Vadodara, India

Master of Engineering, Electrical Power Engg.

2014 - 2016

Institute of Technology, Nirma University

Ahmedabad, India

Bachelor of Technology, Electrical Engg.

2010 - 2014

PROJECTS

Ask your Wind Turbine | *Python, Langchain, Streamlit*

May 2024 – Present

- Developed an interactive chat interface for wind turbine condition monitoring.
- Utilized Langchain agents and OpenAI LLM for Q&A with turbine SCADA data.

Wind turbine bearing prognosis | *Python, NumPy, TensorFlow, Sklearn*

Apr 2023 – May 2023

- Developed a predictive maintenance model for wind turbine bearings using Python.
- Implemented machine learning algorithms with TensorFlow and Scikit-learn for prognosis.
- Analyzed and interpreted results to optimize maintenance scheduling and minimize downtime.

Wind turbine blade damage detection | *Python, TensorFlow, OpenCV*

May 2021 – Aug 2021

- Developed a wind turbine blade damage detection system using deep learning and computer vision techniques.
- Employed transfer learning techniques to leverage pre-trained models for better performance using the Tensorflow library.
- Documented project findings, methodologies, and results for future reference and reproducibility.

CERTIFICATIONS

Generative AI with Large Language Models by DeepLearning.AI and Amazon Web Services (AWS)

Issued May 2024

MAJOR PUBLICATIONS

- H. Dhiman, D. Bhanushali, C. Su, T. Berghout, Y. Amirat, M. Benbouzid, "Enhancing Wind Turbine Reliability through Proactive High-Speed Bearing Prognosis based on Adaptive Threshold and Gated Recurrent Unit Networks", 49th Annual Conference of IEEE Industrial Electronics Society (IECON) 2023, Accepted
- H. S. Dhiman, D. Deb, S. M. Muyeen, and I. Kamwa, 'Wind Turbine Gearbox Anomaly Detection based on Adaptive Threshold and Twin Support Vector Machines', IEEE Transactions on Energy Conversion, pp. 1–1, 2021.
- H. S. Dhiman, D. Deb, J. Carroll, V. Muresan, and M.-L. Unguresan, 'Wind Turbine Gearbox Condition Monitoring Based on Class of Support Vector Regression Models and Residual Analysis', Sensors, vol. 20, no. 23, p. 6742, Nov. 2020.
- A. Redekar, H. Dhiman, D. Deb, S.M. Muyeen, "On Reliability Enhancement of Solar PV Arrays using Hybrid SVR for Soiling Forecasting based on WT and EMD Decomposition ", Ain Shams Engineering Journal, Elsevier, 2024, (Accepted)
- H. S. Dhiman, P. Anand, and D. Deb, 'Wavelet Transform and Variants of SVR with Application in Wind Forecasting', in Advances in Intelligent Systems and Computing, Springer Singapore, 2018, pp. 501–511.