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HAMID ETTAYYEBI

Data Scientist

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I am a Data Scientist with +4 years of expertise in machine learning, time series forecasting, and statistical modeling, with a proven track record of improving forecasting accuracy and optimizing models. I worked as a mathematics teacher and now I'm pivoting back to data science. Curious and analytical, with a strong ability to extract meaningful insights from complex data and communicate findings effectively. Adept at problem-solving, critical thinking, and data storytelling, translating data into actionable business strategies.

Skills

Programming Languages:	Python(Pandas, NumPy, SciPy, Scikit-Learn, TensorFlow, Keras), SQL(MySQL)
Tools and Platforms	Git/GitHub, LaTeX
Machine Learning	Deep Learning, Statistical Modeling, Time Series Forecasting, Fine-Tuning, Machine Learning Pipelines
Soft Skills:	Data Storytelling, Problem Solving, Critical Thinking, Creativity, Curiosity, Team Player
Languages	Arabic (Native), English (C1), French (B2)

Technical Experience

Research Assistant / PhD Candidate (in Data Science) **Jan 2017 - Sep 2021**
Mohammed V University *Rabat, Morocco*

- Developed **Deep Learning models** for daily solar radiation **forecasting**, reducing **Normalized Root Mean Square Error by 15%** compared to traditional models such as **SARIMA, Exponential Smoothing**, allowing for more efficient energy grid management and optimized resource allocation for renewable energy systems.
- **Optimized model performance** by applying **fine-tuning** and stationarization techniques, leveraging ACF, PACF, and CCF functions.
- **Published and presented two peer-reviewed articles** on solar radiation forecasting, advancing methodologies in renewable energy predictions.

Mathematics Teacher **Sep 2017 - Aug 2024**
Regional Academy for Training and Education *Rabat, Morocco*

- Enhanced analytical reasoning in 80% of students through data-driven teaching strategies.
- Leveraged **data-driven analytics** to evaluate student performance trends and optimize instructional strategies for improved learning outcomes.

Projects

Transformer-Based Global Horizontal Irradiance Forecasting **Aug 2024 - Jan 2025**
Personal project - DOI: 10.13140/RG.2.2.36728.15365 *Rome, Italy*

- Inspired by NLP problems, developed a novel **Transformer-based model** for Global Horizontal Irradiance (GHI) forecasting, achieving a **20% reduction in Root Mean Squared Error** compared to **LSTM models**, improving solar energy system efficiency by providing more accurate predictions of hourly GHI, allowing better grid management and reducing operational costs.
- Designed and implemented a **multi-head attention mechanism** to eliminate sequential dependencies, enabling **parallel training** and significantly reducing **computational time by 50%** for solar radiation predictions.
- deployed an **interactive dashboard** using **Dash and Plotly**, enabling real-time visualization and comparison of predictions from Transformer and LSTM models, facilitating user-friendly analysis of forecast metrics, and allowing for the download of prediction data, supporting informed decision-making in solar energy management and grid operations.

Publications

Artificial Neural Networks for Forecasting The 24 Hours Ahead of Global Solar Irradiance Sept Jun 2018 - Dec 2018
Published in AIP Conference Proceedings (2018) – DOI: 10.1063/1.5084983

Artificial Neural Network for Forecasting One Day Ahead of Global Solar Irradiance Sept 2017 - Jun 2018
Published in Smart Application and Data Analysis for Smart Cities (SADASC'18)– DOI: 10.2139/ssrn.3179472

Education

Phd Candidate In Applied Mathematics Statistics and Deep Learning (Incomplete) Jan 2017 - Sep 2021
Mohammed V University

Master's Degree in Mathematics and Applications, Statistics, and Scientific Calculations Sep 2015 - Sep 2017
Mohammed V University
Awarded the Highest score in the Master class.

Certifications

IBM Data Science Specialization Feb 2025
Credential ID: W85E3XU7YR5X