DHAWAL JOSHI

Charlotte, NC 28262 | 704-756-4442 | dhawaldjoshi@gmail.com | www.linkedin.com/in/dhawaldjoshi/ | http://dhawaljoshi.netlify.app/

Motivated Scientist/Engineering professional ideally suited for a challenging role as a data scientist. Skilled at developing ML algorithms for timeseries analysis, data processing and data mining. Passionate about energy and extracting knowledgeable insights from data.

SKILLS

Python | R | MATLAB | SQL | Predictive Analytics | Timeseries Analysis | Anomaly Detection| Data Mining | Data Analysis | Data Visualization | Data Modelling | Statistical Analysis | Deep learning | Neural Networks | Machine Learning | Unsupervised Learning | Clustering | Classification | Linear and Logistic Regression MS Office | Latex | Git

EXPERIENCE

Research Assistant, UNC Charlotte, Charlotte, North Carolina *11/26/2018 – 05/08/2020*

Unsupervised Anomaly Detection to Analyze Grid Sensor Data

- Developed unsupervised anomaly detection ML models such as isolation forest and adtk using python to detect possible events on the electric grid without prior grid topology and labelled event record information.
- Implemented a meta heuristic technique; Particle Swarm Optimization to improve the detection accuracy of isolation forest algorithm.
- Implemented a change point detection technique; Singular Spectral Transformation to capture oscillatory behavior in timeseries data.

Short Term Load Forecasting

- Built predictive models such as regression, random forest, and neural networks for short term forecasting.
- Designed heuristic algorithms to select optimal features for exploring recency effect in order to improve load forecasting accuracy.
- Created advanced visualizations to validate predictive models using matplotlib, seaborn and plotly.

Statistical Modelling for Paint Droplet Size Distribution

- Developed statistical models for the analysis of paint droplet size distribution and created advanced visualizations to present the results.
- Developed a MATLAB executable to deliver results according to the user inputs.

Wind Power Forecasting

Implemented SVM, random forest and gradient boosting to develop ensemble model to accurately forecast wind power.

Assistant Engineer, Energize Sustainable Solutions Pvt Ltd, Nagpur, India *12/11/2017 – 07/31/2018*

Successfully managed system compliance with the Government of India Tenders for Solar Water Dual Pumps and Solar Irrigation Pumps for a startup company for solar pumping.

- Worked in an Agile environment.
- Designed database to store financial and technical specifications of available components to improve quality of analytics for clients.
- Created data pipelines for optimizing financial and technical client specifications leading to reduction in costs up to 25.
- Worked on SQL scripts using MySQL to load CSR client data fetch relevant reports.
- Conducted significant corporate client interactions to communicate social welfare created by system.
- Communicated technical details of Solar Rooftop design and installation with more than 20 clients.

EDUCATION

MS Applied Energy and Electromechanical Systems, University of North Carolina Charlotte, Charlotte, NC *May 2020 – GPA: 3.6*

Relevant Coursework: System Dynamics, Energy Generation/Conversion, Energy Transmission/Distribution, Energy Systems/Markets

BE Electrical Engineering, Savitribai Phule Pune University, Pune, India *May 2017 – CPI: 61*

Relevant Coursework: Power Systems, Power System Protection and Control, Numerical Methods and Computer Programming, Renewable Energy Systems

PUBLICATIONS

Master Thesis: Unsupervised Learning for Critical Event Detection Using Historical PMU Data – Published on ProQuest

Scientific Journal Articles

- Unsupervised, Automated Event Detection on Power Grid Using High-Resolution PMU Data - In Review at IEEE Transactions in Power Systems
- Exploring Recency Effect for Electricity Price Forecasting Using Meta-heuristics – In progress
- Wind Power Forecasting Using Numerical Weather Prediction Data – In progress

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REFERENCES

Dr Maciej Noras, Associate Professor, Dept of Engineering Technology, UNC Charlotte **Email**: mnoras@uncc.edu

Dr Umit Cali, Associate Professor, Dept of Electric Power Engineering, NTNU **Email:** umit.cali@ntnu.no

Mr Shriniwas Mandlekar, Director, Energize Sustainable Solutions **Email**: shriniwas@energizeindia.com