Gopal Chitalia

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Education

Purdue University August 2023 – December 2024
Graduate Student in CS *Current GPA: 3.94/4.0*
IIIT-Hyderabad August 2015 – July 2019
Bachelors of Technology And Masters By Research in IT *GPA: 8.03/10.0*

Coursework & Technical Skills

Relevant Coursework: ML for Power System Optimization, Reinforcement Learning, Data Structures & Algorithms, Database Systems, Information Retrieval and Extraction, Optimization Methods, SSAD
Languages: Python, C/C++, Matlab, R, Bash, JavaScript/TypeScript, HTML/CSS
Libraries: Tensorflow, Keras, Pytorch, OpenAI Gym, Pandas, Matplotlib
Framework & Tools: Git, LaTeX, Django, Postman, FastAPI, AWS, Docker

Publications

1. **Gopal C.,** Manisa P., Vishal G., Saifur R., Robust short-term electrical load forecasting framework for commercial buildings using deep recurrent neural networks, ***Applied Energy***, Volume 278, 2020 – Link [**156 citations**]
2. Pipattanasomporn, M., **Chitalia, G.**, Songsiri, J. et al., CU-BEMS, Smart building electricity consumption and indoor environmental sensor datasets. ***Nature Scientific Data***, 241, 2020 – Link [**75 citations**]

Experience

Machine Learning Engineer — Growthworks.ai Boston | Remote - April 2022 – July 2023
- Managed a proof-of-concept project utilizing different data analytics, ML methods to do real-time electricity market prediction at California-ISO region achieving an accuracy improvement of **15%**
- Utilized Apache Spark and Python to design and construct a scalable data pipeline, reducing data processing latency by **20%**

Data Scientist — ClevAir Stavenger, Norway - March 2020 – March 2022
- Led the implementation of advanced deep learning models, utilizing **LSTM, transformers with attention** to forecast HVAC and building-level energy consumption, achieving **30%** savings
- Designed an in house algorithm to automate sensor clustering, resulting in a **50%** reduction in time and manual work for the delivery team

Software Developer Intern — Progress Software Hyderabad, India - Aug. 2016 – Dec. 2016
- Built a mobile app for the web counterpart. Prototyped and developed the overall back-end of the application
- Technologies Used: **NativeScript, TypeScript, HTML/CSS/JS, Postman**

Research Internships

MDLab | Purdue University August 2023 – Present
Research Assistant | *Guide: Jan-Anders Manson* *West Lafayette, IN, USA*
- Working on transfer learning based approach for fault detection in induction motors (Project with Wistron)
- Working on location selection analysis for establishing a manufacturing industry in USA using advanced technical cost models to analyze and compare various locations

Smart Grid Research Unit | Chulalongkorn University July 2019 – March 2020
Research Intern | *Guide: Manisa Pipattanasomporn* *Bangkok, Thailand*
- Developed a forecasting webserver using **Docker, AWS,** and **FastAPI**
- Developed a robust **deep learning based framework** for building-level load forecasting, improving the results by **20-45%**. Resulting work got published in Applied Energy
- Created a state-of-the-art dataset for **smart building energy consumption and indoor environmental monitoring**. Our work has been published in Nature Scientific Data

Major Projects

Distributed Stock Market Application: Developed a microservices-based stock market app with concurrent user support, in-memory caching, and fault-tolerance, deployed on AWS using Docker. Ensured minimal server downtime.

Variational Autoencoder (VAE): Developed a VAE neural network for image generation, conducting a comparative analysis with varied parameter adjustments on MNIST, CIFAR10, and CALTECH101 datasets Link

Wikipedia Search Engine: Designed a scalable and efficient search engine utilizing 70GB of Wikipedia data. Implemented in Python with diverse indexing and ranking techniques to deliver top-relevant documents for given query