

Prasanna Venkatesh Thambuanantharaman

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EDUCATION

North Carolina State University, Master of Computer Science Aug 2023 - May 2025
Relevant Coursework: Automated Learning & Data Analysis, Neural Networks, Algorithms, Cloud Computing GPA:3.889/4.0
Amrita Vishwa Vidyapeetham, Bachelor of Technology in Computer Science Jun 2016 - Aug 2020
Relevant Coursework: Data Structures, Database Systems, Machine Learning and Data Mining, Neural Networks GPA:9.06/10

WORK EXPERIENCE

Data Engineer II - Tata Consultancy Services, Chennai, India Jun 2022 - Jul 2023

- Leveraged Snowflake, CircleCI, SQL, AWS & Terraform to build a data pipeline that calculated and reported the carbon emissions of Sainsbury's, **saving over 30 man-hours per month of manual efforts**.
- Designed the architecture of the pipeline, defined tables in the data lake, and configured the cloud infrastructure.
- Headed the Data Analytics and Visualization sub-group and conducted analysis of the emissions data to identify areas of improvement. Built 4 Tableau dashboards to visualize the impact of sustainability initiatives.
- Drafted a plan of action based on the insights acquired to **reduce emissions by approximately 35% year over year**.
- Facilitated the onboarding of 8 new data engineers, providing mentorship and conducting knowledge-sharing sessions.

Data Engineer I - Tata Consultancy Services, Chennai, India Sep 2020 - Jun 2022

- Developed data acquisition solutions and ETL pipelines by using Python, SQL and Apache Kafka. **Scaled up the solutions, acquiring and processing data from over 30,000 sensors and multiple APIs** to optimize energy usage.
- Led a team of 4 data engineers to develop a new algorithm which employed threading and asynchronous processing to improve performance and accomplished an **improvement of over 3x in acquisition and processing speeds**.
- Included additional redundancy measures to guarantee data delivery and data security in case of failures along the pipeline.
- Trained and deployed ML models that incorporated SVM, Random Forests, Reinforcement Learning, Neural Networks etc. to recommend energy saving optimizations which resulted in a **12% reduction in energy costs**.

Software Engineer Intern - Tata Consultancy Services, Chennai, India Feb 2020 - Jul 2020

- Created mathematical models and algorithms using Python, Linear Algebra, and Pandas to solve supply chain management problems like full truckload, network optimization, last-mile delivery, etc.
- Produced a proof of concept network optimization algorithm to optimize the delivery network and schedules which **resulted in potential savings of 22% in delivery costs**.

PROJECTS

Machine Learning

- Implemented a Music recommendation system using LightGBM, Behavior Sequence Transformer, and LightGCN models on Spotify's Music Streaming Sessions dataset. Achieved an **AUC score of 97.7% and Recall of 93.4%** using LightGCN. [\[Link\]](#)
- Built a CNN model that recognizes famous artists when given a URL of their artwork with a validation accuracy of over 86%. Trained, containerized and deployed the model using Google Cloud Run and Docker. [\[Github\]](#) and [\[Live Demo\]](#).

Data Engineering and Cloud Architecture

- Constructed an end to end data pipeline to analyze NYC Taxi data using Mage AI, Google Compute Engine and BigQuery. Modeled the data into fact and dimension tables, setup the pipeline infrastructure, conducted analysis and created a dashboard using LookerStudio to showcase the analytics. [\[Github\]](#) and [\[Dashboard\]](#)
- Designed the cloud architecture of a concert ticket booking website. Employed AWS services like Cognito, EKS, Aurora, DynamoDB, Firewall Manager etc. **Achieved a server response time of <300ms** during peak load testing. [\[Github\]](#)

SKILLS

Languages: Python, Java, HTML, CSS, C++, C, R, SQL.

Databases and Operating Systems: MongoDB, Linux, Windows, Ubuntu, Shell scripting.

Tools/Frameworks: Cloud Platforms (AWS, Azure, Google Cloud), Snowflake, Terraform, CircleCI, Kafka, Tableau, PyTorch, TensorFlow, Mage AI, LookerStudio, Kubernetes, Docker, REST API's, Jenkins, Flask.

Certifications and MOOCs: AWS Certified Cloud Practitioner, Applied Data Science with Python, Neural Networks and Deep Learning; Financial Markets (Honors).

EXTRACURRICULARS

- Served as group leader for over 20 programs in Tata Consultancy Service's #millionhoursofpurpose volunteer campaign.
- Active member of the Data Science Club and Science Policy Pack Club at NC State University.