Prasanna Venkatesh Thambuanantharaman

919-633-8167 | pthambu@ncsu.edu | **LinkedIn** | Raleigh, NC

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

SKILLS

Languages: Python, Java, HTML, CSS, C++, C, R.
Databases and Operating Systems: MySQL, MongoDB, Linux, Windows, Ubuntu, Shell scripting.
Tools/Frameworks: GIT, REST API's, Jenkins, Docker, Cloud Platforms (AWS, Azure), Snowflake, Terraform, CircleCI,
 Kafka, Asyncio, Tableau, PyTorch, TensorFlow, Kubernetes, Agile Methodology.
Certifications and MOOCs: AWS Certified Cloud Practitioner, Applied Data Science with Python, Neural Networks and
 Deep Learning; Financial Markets (Honors).

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.
- Built a Deep learning model to classify URLs as malicious or benign based on host-based and natural language features. **Improved the model's accuracy to 96%** through feature selection, hyperparameter tuning and cross validation.
- Developed a content-based movie recommendation website using Cosine Similarity & Naïve-Bayes to recommend movies.

Database Design and Systems Architecture
- Constructed a website with HTML, CSS & a MySQL database to handle the booking operations of a taxi/cab booking company. Defined and normalized 15+ tables in the database. Implemented indexing and **enhanced query performance by 13%**.
- 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.

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.