Ananya Mantravadi

Raleigh, NC, USA | (919) 633-4548 | amantra@ncsu.edu | linkedin.com/in/ananya-mantravadi | github.com/ananya173147

WORK EXPERIENCE

Artificial Intelligence & Machine Learning Co-op Intern, NetApp, Durham, USA *Jun 2024 - Present*

- Modeled time-series classification for churn prediction using XGBoost and dynamic time warping with 83% F1-score. Outlined MLOps workflows for potential deployment, including integration, training automation, and monitoring. Conducted impact analysis by estimating revenue loss, optimizing resource allocation by determining that deployment costs outweighed potential benefits.
- Developed time-series, regression-based models in Python, SQL, & DataRobot to forecast annual recurring revenue, integrating hierarchical customer and geographical levels, attaining a 1.1% mean absolute percentage error over 4 quarters.

Graduate Teaching Assistant, NC State University, USA, IIIT Raichur & IIT Hyderabad, India *Aug 2021 – May 2024*

- Graded assignments, evaluated projects, and conducted tutorial sessions for graduate and undergraduate courses like Object-Oriented Design & Development, Operating Systems, and Data Structures. Guided over 150 students across 3 institutions.

Data Science Intern, Mahindra & Mahindra Financial Services, Mumbai, India *Jan 2022 - Jun 2022*

- Designed, built, and deployed a voting ensemble classification model on Azure ML for predicting cases likely to default while extending loan offers for Scorpio Z101, a newly launched SUV. This model was developed using features extracted from large-scale credit bureau data and the internal bank database. The model's recall value of 72% achieved an improvement of 40%.
- Developed and executed ETL pipelines, utilizing Python and SQL, to process retro scrub data from diverse credit bureau sources such as CRIF, CIBIL, and Experian reducing data processing time by 20 hours.

EDUCATION

North Carolina State University, Raleigh, NC *May 2025 (Expected)*
Master of Computer Science, CGPA: 4.00/4.00
Relevant Coursework: Automated Software Engineering, Database Systems, Operating Systems, Neural Networks & Deep Learning

Indian Institute of Information Technology, Raichur, India *May 2023*
Bachelor of Technology, Computer Science and Engineering, CGPA: 8.8/10
Relevant Coursework: Data Structures & Algorithms, Multimedia Content Analysis, Natural Language Processing

Indian Institute of Technology, Madras, India *Sep 2022*
Diploma in Data Science, CGPA: 9.2/10
Relevant Coursework: Statistics for Data Science, Machine Learning Techniques & Practice, Business Data Management & Analytics

PUBLICATIONS

- Mantravadi, A., et al. (2024). **CLINet: A Novel Deep Learning Network for ECG Signal Classification**. In Journal of Electrocardiology, DOI.
- Mantravadi, A., Makwana, D., Mittal, S., & Singhal, R. (2023, April). **Dilated Involutional Pyramid Network (DInPNet): A Novel Model for Printed Circuit Board (PCB) Components Classification**. In 2023 24th International Symposium on Quality Electronic Design (ISQED) (pp. 1-7). IEEE, DOI.
- Mantravadi, A., Raj, K., & Pawar, R. (2023, January). **Spatial Field Fusion Network (SFFNet) for Panoramic Dental X-ray Segmentation**. In 2023 IEEE Applied Sensing Conference (APSCON) (pp. 1-3). IEEE, DOI.
- Susladkar, O., Deshmukh, G., Nag, S., Mantravadi, A., et al. (2022). **ClarifyNet: A high-pass and low-pass filtering based CNN for single image dehazing**. Journal of Systems Architecture, 132, 102736, DOI.

PROJECTS

Wolf Parking Database Management System: Designed and developed a parking management system to efficiently manage university campus parking lots and user data, including driver details, permits, citations, and reports using Java, SQL, and MariaDB.
Parallel Graph Coloring with Locks: Employed multithreaded programming in C++ for a parallel graph coloring algorithm, ensuring thread synchronization using coarse-grained and fine-grained locks.
Named Entity Recognition using CRF & BERT: Built a Conditional Random Fields model incorporating features based on POS tags, neighboring words, suffix symbols, and a transformer model BERT, adding a specialized layer fine-tuned to achieve 87% and 85.8%, 97.5% and 97.4% validation accuracies and F1 scores respectively for fine-grained NER on the English setting of MultiCoNER II Dataset.
Optimizing Contrast Stretching with CUDA: Implemented parallel reduction algorithms for image contrast stretching, delivering a 97.5x speedup and 66.66 GB/s memory bandwidth over CPU baselines. Utilized advanced techniques like interleaved addressing, non-divergent branching, and warp unrolling to enhance computational efficiency and scalability.

TECHNICAL SKILLS

- **Languages:** Python, C++, C, CUDA
- **Databases & OS:** SQL, NoSQL, MySQL, MariaDB, MongoDB, Windows, Linux (Ubuntu)
- **Libraries & Tools:** Git, Spark, Tableau, TensorFlow, Keras, PyTorch, LangChain, LlamaIndex, DataRobot, Azure ML, Docker

AWARDS/HONORS

- Selected as a STARS AI Scholar, engaged in AI education, promoting diversity, and presented at Tapia STARS celebration 2024.
- Awarded AnitaB.org Advancing Inclusion Scholarship to attend the Grace Hopper Celebration 2024 in Philadelphia, PA.

LEADERSHIP & EXTRACURRICULAR EXPERIENCE

- Pioneered the establishment of Google Developer Student Clubs at IIITR, hosted events on developer products & technologies.
- Carnatic classical vocalist with over a decade of experience, gave performances and awarded in state-level music competitions.