

TARUN REDDI

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EDUCATION

University at Buffalo, The State University of New York

Buffalo, NY

Masters in Computer Science and Engineering; Concentration: AI/ML; GPA: 3.8/4.0

Aug 2023 - Dec 2024

- Deep Learning, Reinforcement Learning, Machine Learning, Data Intensive Computing, Computer Vision.

Vellore Institute of Technology

AP, India

Bachelor of Technology - Computer Science and Engineering, Network & Security; GPA: 8.8/10.0

Jun 2019 - Jun 2023

SKILLS

Programming: Python, Java, C/C++ , R, SQL, JavaScript, HTML, CSS, PHP

Tools: Git, Docker, AWS, PySpark, Linux, Figma, Illustrator, Premiere Pro

Frameworks: Flutter, Hadoop, MapReduce, Django, Flask, ReactJS, Node.js

Libraries: TensorFlow, PyTorch, Keras, Scikit-learn, Seaborn, Plotly, Spacy, NLTK, OpenCV, Gensim, Open AI Gymnasium

Soft Skills: Attention to detail, Adaptability, Effective Communication, Team Collaboration, Problem-solving

PROJECTS

F.E.A.S.T - Food & Ingredient AI Suggestion Technology | [Github](#)

Jan - May 2024

- Integrated ingredient detection with recipe generation and nutritional insights, measured fluency with BLEU metrics.
Practices: Dynamic Data Pipeline, Model Training and Optimization, LLM Integration, Natural Language Processing.
- Customized machine learning pipelines and automated annotation. Trained with 100 ingredients, 2.5M recipes, deploying YOLO V7/V9, BART/T5 transformers. Presented user-friendly solution at [CSE Demo Day](#), selected among 150 projects.

RxRovers: Roaming for Rapid Relief | [Github](#)

Jan - May 2024

- Simulated multi-agents with dynamic obstacle avoidance and path planning, navigating hospitals for medicine delivery.
Practices: State Space Analysis, Temporal Difference Learning, Performance Monitoring, Error analysis.
- Compared performances of 6 models including DQN, A2C, and PPO, refining policy for complex stochastic environments.

NEXUS - Neural Exploration and Understanding Systems | [Github](#)

Jan - Mar 2024

- Applied optimization techniques to a transformer architecture for classifying news articles, achieving an accuracy of 91.83%.
Practices: Tokenization, Parameter Tuning, Advanced Neural Network Architectures, Autoencoders.
- Implemented time-series forecasting and anomaly detection, and optimized with 15 hyperparameter tuning combinations.

Mel Spectrogram Image Feature Extraction CNN | [Github](#)

Sept - Dec 2023

- Performed multiclass Music Genre Classification with Feature Extraction using CNN, achieving near human-level accuracy.
Practices: CNN Techniques, Data Handling, Model inference, Model Training Optimization.
- Curated unstructured data & applied CNN and Transfer Learning on 10,000 samples, reducing processing time by 50%.

EXPERIENCE

University at Buffalo, The State University of New York

Buffalo, NY

Research Assistant, guided by Prof. Shamsad Parvin

Jan 2024 – Present

- Analysed 1.5M crime instances with 14 ML models, to integrate Spatio - Temporal and Textual analysis for predictive policing.
- Leveraged distributed computing (Hadoop) to handle vast spatial data for clustering algorithms and measured performance of 0.91 Silhouette score, indicating dense clusters.
- Executed 5 topic modelling and temporal analysis with Latent Dirichlet Allocation (LDA), NLP techniques and LSTM.

Emryn

Houston, TX

Technical Operations Intern (Remote)

Jan – Jun 2023

- Led full-stack migration of company brand from IntelQ to Emryn, leveraging React for website and Figma for logo creation.
- Formulated 20+ security policies and scalable configurations to ensure data integrity, vital for business operations.
- Automated resolution of email & DNS issues for 6+ use cases using Python scripts, ensuring seamless communication.

Center of Excellence, Cyber Security - VIT AP

AP, India

Research Assistant

Jan 2022 - Jan 2023

- Developed AI spam filtering pipeline with 30 test cases, studied demographic impacts on email spoofing detection, and devised 11 mitigation plans for improving email security.
- Enhanced cyber defense mechanism with an AI-based pipeline and CrowdSec enhancing threat detection by 90%.

PUBLICATIONS

Mapping Crime Dynamics: Integrating Textual, Spatial, and Temporal Perspectives <i>IEEE UEMCON</i>	Aug 2024 <i>In Process</i>
A comprehensive examination of email spoofing: Issues and prospects for email security <i>Elsevier, Computers & Security, Vol 137, 2024</i>	Nov 2023 Link
A Traffic Control System <i>Official Journal of the Patent Office, India</i>	Sep 2023 Link

HOBBIES & RESPONSIBILITIES

Teen Different, Medium <i>Content Creator (Part-time)</i>	Jul 2022 - Present Explore
<ul style="list-style-type: none">• Authored 50+ articles on AI, Machine Learning, Technology, and Security, growing popularity and influence with 300+ views in 3 days. Effectively communicated ideas, fostering engagement with a growing audience of 473 followers.	
Melange Initiative, VIT AP <i>Creative Lead</i>	Mar 2021 - Jun 2023
<ul style="list-style-type: none">• Thrived in a fast-paced environment, coordinating operations for campaigns, crafting 20+ videos and 50+ posters, boosting brand visibility and engagement on social media, resonating with diverse audiences, and aligning with the event's ethos.	
Android Student Organization, VIT AP <i>Creative Lead</i>	May 2021 - Jun 2023
<ul style="list-style-type: none">• Organized over 10 workshops, promoting Android technology awareness, fostering peer skill development, and collaborating on 5 application prototypes. Practices: User-Centered Design, Application Prototyping & Development.	