Tanwin Chowdary, Gunturu

New York, USA | +1(716)-580-0088 | gtanwinchowdary@gmail.com | linkedin.com/in/tanwinchowdary | github.com/Tanwin2001

EDUCATION

Master of Science: Artificial Intelligence and Robotics, University at Buffalo SUNY, USA   Jan 2024
Bachelor of Engineering: Computer Science, **SRM University AP**, India   May 2022

SKILLS

- **Languages & Libraries:** Python, Java, JavaScript; TensorFlow, PyTorch, ROSpy, Gazebo, OpenCV, OpenAI Gym.
- **Data Science & Engineering:** Pandas, NumPy, Hadoop, Spark, ETL (NiFi, Talend), SQL/NoSQL, MongoDB.
- **Machine Learning & Robotics:** Deep Learning, Reinforcement Learning, Computer Vision, Simulation & Modeling, Stereo Vision Odometry.
- **Tools & Platforms:** Git, Jira, Agile, AWS, Azure, Matplotlib, Seaborn, Tableau, Power BI.

WORK EXPERIENCE

Data Analyst , JerseySTEM.org (Florham Park, NJ):   Mar 2024
- Transitioned the existing database from **Excel to SQL using Alteryx**, ensuring data integrity and accessibility.
- Worked in a team of 5 to build an **AppSheet-based app "Activity Log"** to track and report employee work activity.
- Developed and deployed an **SQL and Python-based automated data pipeline**, enhancing analysis of volunteer engagement and program efficacy by 40%.
- Initiated daily AppSheet reports, providing critical updates that improved project tracking efficiency by 30%.
- Implemented Jira and Agile methodologies to increase Data Analytics project management productivity by 25%.

PROJECTS

Forest Fire Management using Deep Reinforcement Learning: *Python, PyTorch, OpenAI Gym, OpenCV*

- Engineered a Reinforcement Learning (RL) system to tackle forest fires, using a complex multi-agent grid simulation(OpenAI GYM env) that processed over 200,000 state-action pairs to train models in both stochastic and deterministic environments. Coordinated a team of 3 to develop firefighting strategies using SARSA, Q-Learning, DQN,DDQN and other Deep RL algorithms, improving response efficiency by 30% in simulated scenarios.
- Pioneered a custom-built RL environment, contributing to a substantial advancement in applying machine learning to environmental preservation and disaster mitigation efforts.

Path Estimation Using Stereo Vision Odometry (F1tenth car simulation): *ROSpy, Gazebo, SIFT, SfM*

- Spearheaded a cutting-edge visual odometry project, integrating feature detection and tracking using SIFT within the ROS ecosystem, employing Gazebo for high-fidelity simulation of an F1-10th scale autonomous car.
- Refined depth estimation techniques by implementing Stereo Odometry and Structure from Motion for monocular streams, enhancing navigational precision.
- Optimized path estimation algorithms through the Levenberg-Marquardt technique, achieving over 80% accuracy in autonomous trajectory mapping.

Big Data Analytics using Hadoop and Spark: *Java, Hadoop, HDFS, Spark, Python, Pandas, Numpy, Streamlit*

- Derived N-gram word co-occurrences along with lemmatization from a large-scale Latin text data utilizing MapReduce and Spark.
- **Predictive Sales Analysis and Web Application Development:** Architected a robust sales prediction model, achieving a 62% accuracy rate using Random Forest Regression with over 400 estimators and in-depth parameter optimization. Developed and deployed an interactive Streamlit web application, enabling dynamic sales forecasting and data visualization for end-users, with complete front-end and back-end integration.

Real-Time Human Body Pose Estimation and Analysis: *Python, MediaPipe, OpenCV, Machine Learning*

- Implemented a pose estimation model that tracks and analyzes key joint movements of the human body with an accuracy of 83%, utilizing BlazePose from TensorFlow and MediaPipe and OpenCV technologies. Achieved robust pose tracking across facial features, hands, and limbs, paving the way for advancements in virtual reality, gaming, and motion analysis.

CERTIFICATIONS AND ACHIEVEMENTS

- Earned the **AppSheet Business Application Creator Certification**, scoring higher than 80%, in recognition of proficiency in developing business applications (March 2024).
- Spearheaded financial management as **City Manager at Make A Difference (MAD) Initiative**, Vijayawada (Aug 2018 - Jun 2022), implementing cost-cutting strategies and managing budgets, which honed my leadership and strategic financial planning skills.