

Raghu Ram Sattanapalle

📍 Boston, MA, USA - 02119 📞 +1 (347)-873-2177 ✉️ sattanapalle.r@northeastern.edu
🌐 [linkedin.com/raghuramsattanapalle](https://www.linkedin.com/in/raghuramsattanapalle) 🏠 github.com/RaghuRamSatt 🌐 raghuramsatt.github.io

Education

| | |
|---|--------------------------------------|
| Northeastern University <i>Master's of Science in Data Science (GPA: 4.00 / 4.00)</i> • Relevant Coursework: Large-Scale Parallel Data Processing, Algorithms, Supervised Machine Learning, Database Management | Expected May 2025 Boston, MA, USA |
| New York University <i>Master's of Science in Mechanical Engineering (GPA: 3.40 / 4.00)</i> • Relevant Coursework: Robot Perception, Simulation Tools and Software for Mechatronics and Robotics | May 2018 New York, NY, USA |

Technical Skills

Languages: Python, R, MATLAB, SQL, C++, Julia, Scala
ML & Data Analysis: PyTorch, TensorFlow, Statistical Modeling, Time Series Analysis, Pattern Recognition, Causal Analysis
Database & Tools: MySQL, MongoDB, NoSQL, PostgreSQL, Hadoop, Git, AWS (EC2, S3, SageMaker), Tableau

Experience

| | |
|--|--|
| Northeastern University, Khoury College of Computer Sciences <i>Graduate Teaching Assistant - CS5800 Algorithms</i> • Facilitated graduate-level algorithms education, covering topics from fundamental data structures to advanced algorithms including Dynamic Programming, Graph Algorithms, and NP-complete problems. • Provided comprehensive support through grading assignments, offering constructive feedback, and conducting weekly office hours, enhancing student understanding and performance. | Sept 2023 - Dec 2023; July 2024 - Present Boston, MA |
| Veeco Instruments <i>Engineering Data Scientist (Co-op)</i> • Developed advanced machine learning models using TensorFlow and PyTorch to predict boron wafer resistance, achieving a 6% average error rate and improving manufacturing efficiency. • Implemented innovative techniques such as data augmentation and group normalization to overcome limited data challenges, enhancing model performance in semiconductor manufacturing processes. • Engineered Python scripts for systematic data extraction and structuring, achieving 100% data capture and significantly improving data quality. • Created visualization code for manufacturing tool channel data, enabling better pattern recognition and facilitating data-driven decision-making in production processes. | Jan 2024 - June 2024 San Jose, CA |
| NYU Dynamical Systems Laboratory <i>Researcher/ Research Assistant</i> • Spearheaded the development of machine learning models to predict ICU patient mortality rates, achieving 90% accuracy and contributing to improved patient care strategies in healthcare analytics. • Conducted groundbreaking causal analysis study on gun prevalence and mass shootings, resulting in a publication in Nature Human Behaviour and securing \$2.1 million in research funding. • Created innovative information theory-based models of zebrafish behavior, leading to a publication in Flow: Applications of Fluid Mechanics and advancing understanding of collective animal behavior. • Mentored a research team in advanced methodologies and statistical analysis, fostering a collaborative research environment and enhancing team productivity. | Sep 2018 - Jan 2019; June 2019 - Aug 2021; Jan 2022 - Aug 2022 Brooklyn, NY |

Projects

| | |
|---|----------------------|
| Optiver - Trading at the Close: Predict US Stock Movements Python, LightGBM, XGBoost, PyTorch • Developed ML models to predict stock price movements during closing auction for NASDAQ-listed stocks, achieving top 20% ranking in a Kaggle competition. Preprocessed over 5 million data points, applying feature scaling and imputation to enhance model performance. • Engineered advanced features including temporal lagged variables and rolling window statistics, significantly improving model accuracy in predicting stock price movements. • Implemented and fine-tuned various models including LightGBM, XGBoost, and Neural Networks, optimizing for Mean Absolute Error (MAE). | Oct 2023 - Dec 2023 |
| Soundit: Database-Driven Music Streaming Platform MySQL, JavaScript, Python • Co-developed a dynamic music platform integrating complex MySQL database schema for user interactions and music management. • Engineered a recommendation system for personalized user experiences, enhancing user engagement and platform functionality. • Implemented user authentication, subscription services, and interactive features using JavaScript and Python. | Oct 2023 - Dec 2023 |
| Environmental Impact Analysis: Air Quality During COVID-19 Python, SQL, Data Visualization • Led a team investigation into the correlation between COVID-19 lockdown measures and air quality in Massachusetts, utilizing Air Quality Index (AQI) and Social Distancing Index (SDI) as key indicators. • Leveraged Python and SQL to process and analyze data from multiple sources, creating insightful visualizations to communicate findings. • Developed a comprehensive analysis framework that could be applied to similar environmental impact studies in urban areas. | May 2023 - July 2023 |