

SHRUTI MALLAVOLU

Portfolio Website || [in linkedin.com/in/shruti-mallavolu/](https://www.linkedin.com/in/shruti-mallavolu/) || [✉ smallavolu@umass.edu](mailto:smallavolu@umass.edu) || [📞 +1 \(413\) 210-3675](tel:+14132103675)

Education

University of Massachusetts Amherst

Jan 2022 - Dec 2023

Master of Science in Computer Science, GPA: 3.9/4.0

Amherst, MA

Coursework: ML, Information Retrieval, Reinforcement Learning, Data Science Algorithms, Distributed & Operating Systems

SRM Institute of Science and Technology

Jun 2015 – May 2019

Bachelor of Technology in Computer Science, GPA: 8.67/10.0

Chennai, India

Technical Skills

Programming languages: Python, SQL, R, PostgreSQL, Java, C++

Tools and Frameworks: Tableau, Docker, AWS, Spark, Airflow, Kubernetes, VS Code, Eclipse, Google Colab, Jupyter

ML/AI: Scikit-learn, TensorFlow, Numpy, Pandas, Matplotlib, Pytorch, EconML, Descriptive Statistics, Statistical Analysis

Professional Experience

Microsoft (ALICE team)

Feb 2023 – May 2023

Graduate Student Researcher | *Python, Scikit-learn, JupyterHub, EconML*

Amherst, MA

- Automated the selection of first-stage models and hyperparameters for CATE estimators used in Causal Inference.
- Enhanced R^2 score by 6% through advanced feature engineering and strategic model selection, leveraging regression and classification algorithms on semi-synthetic and synthetic datasets.
- Achieved 62% Runtime and 90% Tao Risk improvement by opting for Bayesian over Grid Search for hyperparameter optimization.
- Effectively communicated progress through reports and presentations to team and mentors.

Salesforce

Aug 2021 – Nov 2021

Support Engineer | *Salesforce Marketing Cloud, SQL*

Hyderabad, India

- Analyzed and debugged over 7% of incidental data generated from all customer reports to promptly resolve cases.
- Provided support in Email Studios for A/B testing and integrations between Salesforce CRM and Marketing Cloud.

Bank of America

Jun 2019 – Jul 2021

Software Engineer | *Salesforce CRM, Sales Cloud, Apex, OOPs, REST API, Bitbucket, Agile, JIRA*

Chennai, India

- Spearheaded ARM portal enhancement, optimizing logic for Financial Advisors' role requests, achieving 50% efficiency boost.
- Implemented a texting interface for streamlined Financial Advisor-Customer communication, integrating Mulesoft and Twilio via REST APIs, reducing response time by 25%.
- Refactored application components, reducing codebase by 1000+ lines and improving system performance by 30%.
- Engaged in Scrum and PI meetings, actively participated in code reviews and monitored production-ready changes in Bitbucket.

Projects

Review of Machine Learning algorithms on various datasets | *Numpy, Pandas, Matplotlib, Google Colab*

Feb 2022

- Selected challenging datasets and executed supervised learning models - Neural Networks, Random Forests, Decision Trees and K-Nearest Neighbours (K-NN) from scratch in python with an accuracy rate of over 90%.
- Evaluated Machine Learning performance metrics - Accuracy, Precision, Recall, Confusion matrix and F1 score to find optimal algorithm for five datasets (Datasets - Parkinsons, Digits, Titanic, Loan, Telecust).

World Development Indicators Dashboard | *Python, Streamlit*

Mar 2022

- Designed an interactive dashboard, representing effect of certain indicators on any particular country in the World Map.
- Enhanced the visualizations by scatter plot and bar graph showcasing the effect of each indicator by allowing a dynamic selection of years and indicators. Incorporated a video feature in scatter plot and bar graph showing evolution of trends over the years.

Predictive Analysis on Stroke Dataset | *R, Statistical Analysis, Kaggle*

Jul 2022

- Analyzed Stroke Prediction Dataset available on Kaggle to predict Body Mass Index using patients' average glucose level and age.
- Data analysis drawn on linear regression model revealed significant correlation among dependent and independent variables with R^2 of 0.2839. Results drawn from chi-square test depict a weak correlation between gender vs stroke, and residence type vs stroke.

Data Analysis and Reporting of College Donations | *Tableau, Excel*

May 2023

- Conducted a comprehensive analysis of college gifts, leveraging Tableau and Excel, to provide insights into donation patterns.
- Visualized and identified key academic donor trends, top college types, historical patterns, and peak donation years.

Build a Toy Store using Microservices | *Docker, Kubernetes, AWS*

Apr 2022

- Deployed 3 distributed microservices - Front-end Service accepts client request, Order Service stores order details and Catalog Service stores toy details. Programmed system to accept concurrent requests, built multi-threading, caching, and fault tolerance.

Achievements

- Published paper on object detection and face recognition in "Journal of Advanced Research in Dynamical and Control Systems".
- Received *Silver award* in Bank of America for contributions towards Technology Focus Group.