SHRITEJ SHRIKANT CHAVAN

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EDUCATION

The University of Texas at Dallas, Richardson, Texas **Expected – Dec 2023**
Master of Science, Business Analytics Data Science Cohort – Minor, Applied Machine Learning **GPA 4.00**
Awards - Dean's Excellence Cohort Scholarship and Graduate Teaching Assistant
Indian Institute of Technology Madras, Chennai, India **Aug 2014 – Sep 2019**
Dual Degree - Bachelor of Technology and Master of Technology, Biological Engineering **GPA 3.54**

PROFESSIONAL EXPERIENCE

Data Science Intern – T-Mobile, TX, United States **May 2023 – present**

- Built **Random Forest** and **LSTMs** models to predict which customers with past due bill amounts and autopay will call care line to make payments by using signals like account delinquency, outstanding balance and payment status with **F-1 score of 0.87**

Data Scientist - Target Corporation India, Bangalore, India **Jan 2020 – Jul 2022**
Merchandising – Store Product Placement Optimization

- Developed quasi-experimental framework consisting of **Difference-in-Difference** and **Synthetic Control** methods for causal inference to evaluate product positioning strategy and product placement and improve ROI by 14%
- Built SKU-level Forecasting engine based on **Interrupted Time Series** analysis by using ProphetFB for time series on top of **Classification and Regression Trees (CART), XGBoost** and **Bayesian Networks** to group similar items and got **MAPE less than 0.3**
- Redesigned Hive-based data pipeline by **PySpark** framework to improve scalability and reduced execution time by 35%

Marketing – Bid Price Optimization

- Led project on optimizing opening bid price to promote specific online searched products and increased revenue by $5M
- Conceptualized methodology consisting of **Monte Carlo** simulation on Bid Price distribution and **SARIMAX** forecasts of metrics like clicks, click rate and cost-per-clicks of sponsored product ads with **MAPE less than 25**%
- Employed **Bayesian Optimization** technique for Hyper-parameter Tuning and improved model's runtime by **50%**

Marketing –Store Remodel Assessment

- Executed **Principal Component Analysis** to reduce dimensions and implemented **Hungarian Optimization** to optimize store layout and **Elastic Net** regression to estimate its financial impact which lifted our sales by **10%**

Machine Learning Intern - Microspin, Chennai, India **Jun 2019 – Jul 2019**
Dynamic systems simulation and control implementing recurrent neural network-based architecture (link)

- Designed consecutive **Long Short-Term Memory (LSTM)** based architecture in Google Colab that emulates controller and motor behavior to forecast future rpm given sequence of input PWMs (voltages) to forestall any motor failures and got **RMSE of 2%**

ACADEMIC PROJECTS

Accented Text-To-Speech Synthesis: Natural Language Processing Project (link)

- Built a Text-to-Speech system capable of accented conversion using L2Arctic dataset (27 hours recorded speech)
- Designed architecture incorporating **Tacotron2** with **Variational Autoencoder**, implementing 2 variants based on labels inclusion
- Achieved Mel Cepstral Distortion (MCD) of 7.1 and Word Error Rate (WER) of 0.25 for No-label model, and 6.98 and 0.24 for label model respectively, outperforming **GMVAE**, GST and GT models to produce state-of-the-art quality speech

Modeling of human gait through Reinforcement Learning, Master's Thesis (link)

- Analyzed **neuronal mechanism** of gait by modeling postural sway during upright human posture as a 1-D inverted pendulum
- Deployed Deep Deterministic Policy Gradient, **Deep Reinforcement Learning** algorithm for continuous action (torque) space and performed **Hyper-parameter Tuning** for 120 epochs to limit 95% of sway frequencies in the range of -1 to 1 and sway to 0.5 cm

Cell segmentation using Convolutional Neural Networks, Computational Cell Biology Course Project, IIT Madras

- Implemented 2D for segmenting yeast cells from microscopy images acquired at multiple focal planes in two channels - brightfield and fluorescence, where brightfield images were model input and fluorescence images served as the ground truth
- Built **2D UNet** with **Dice Coefficient of 0.7** and generated 3D rendering of yeast cells using scikit learn and napari

Media Mix Modelling using Genetic Algorithms and Multivariate Regression, HPE-UTA 2023 Analytics Student Competition (link)

- Secured **1st** place among 52 teams in HPE-UTA 2023 Analytics Competition and presented at UTA's 7th Annual Analytics Symposium
- Formulated **non-linear optimization** problem of marketing campaign's budget allocation using XGB Regressor to predict campaign return like click-through rate and conversion rate and optimize the spending using robust approach of **Genetic Algorithms**

TECHNICAL SKILLS

Programming: Python (TensorFlow, Keras, Pytorch, OpenCV, NLTK, Matplotlib, Scikit-Learn), R, Hive SQL, PySpark, MongoDB, C++
Software: AWS, Snowflake, Apache Hadoop, Kubernetes, Databricks, Airflow, GitHub, Tableau, STATA, SAS, Excel, JIRA, Linux