Arsal Syed

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Education

Sept '17 - May '21 **PhD**, Electrical Engineering, University Of Nevada Las Vegas (UNLV).
Jan '14 - Dec '15 **MS**, Electrical Engineering, New York Institute of Technology (NYIT).
Aug '08 - July '12 **BS**, Engineering Science, Ghulam Ishaq Khan Institute, Pakistan.

Experience

Sep'17 - Present **Graduate Research Assistant, Realtime Intelligent Systems Lab, Las Vegas, NV**
- Developed architectures based on LSTM/GAN/Transformers to predict pedestrian motion
- Incorporate scene information for trajectory prediction using semantic segmentation models
- Model V2V interaction through Graph CNN helping in better AV motion forecasting.
- Designed experiments to evaluate scene context resulting in **12%** decrease in prediction error.

Jan'20 - July'20 **Research Intern, Automotive Products Lab, Hitachi America, Detroit, MI**
- Forecast vehicle speed up to 10 secs with **87 percent** accuracy using recurrent auto encoders
- Deliver production ready code for Nvidia Xavier using TensorRT, reducing inference time by **16%**.
- Set up SQL database to store geo-spatial information and write queries to retrieve optimal routes
- Develop R-Shiny applications for electric vehicle route selection and energy consumption.

Jun'19 - Aug'19 **Applied Scientist Intern, Amazon.com, Seattle, WA**
- Designed elasticity experiments to test customer response by giving **10-40 pound** gift cards
- Preprocessed raw data and built around **400 features** for training machine learning models
- Studied **30k** customer profiles based on RFM score, spending history etc to built prediction model
- Built and tuned logistic regression model to predict probability score of customer acquisition
- Shared business insights and recommended marketing strategies to product managers

Apr'16 - Sep'17 **Controls Systems Specialist, Amazon.com, Avenel, NJ**
- Collaborated with data engineering teams to build realtime database pipelines using AWS stack.
- Devised predictive maintenance plans by analyzing sensor data and forecasting equipment failure.
- Deployed real-time anomaly detection system saving **10 hr** of downtime and **33%** production loss.

Jan'15 - Dec'15 **Research Assistant, New York Institute of Technology, NY**
- Received research funding of **USD 160,000** from **UTRC** for traffic density estimation modeling
- Developed data collection methodology through in-vehicle sensors and cellular infrastructure

Publications

Jun'20 **15th International Symposium on Visual Computing (ISVC), San Diego, USA**
CNN,Segmentation or Semantic Embeddings: Evaluating Scene Context for Trajectory Prediction
Jun'19 **30th IEEE Intelligent Vehicle (IV) Symposium, Paris, France**
SSeg-LSTM: Semantic Scene Segmentation for Trajectory Prediction
Nov'16 **19th IEEE Intelligent Transportation Systems Conference (ITSC), Rio, Brazil**
Prediction of Traffic Density From Wireless Cellular Data

Skills

ML/DL: Logistic Regression, RNN, Random Forest, PCA, Clustering, VAE
AWS: Redshift, S3, Kinesis, Lambda, Rekognition
Programming: Python(Keras, Pytorch, Scikit-Learn), Matlab, SQL, ROS, CARLA