PREETHAM GANESH

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EDUCATION

University of Texas at Arlington — Arlington, TX
Master of Science in Computer Science — Aug 2019 - May 2021
Coursework: Computer Vision (Advanced), Special Topics in Intelligent Systems, Machine Learning (Advanced), Data Analysis & Modeling Techniques, Advanced Algorithms, Neural Networks, Data Mining.

Amrita Vishwa Vidyapeetham — Coimbatore, India
Bachelor of Technology in Computer Science and Engineering — Jul 2015 - Apr 2019
Final Year Project: Forecast of Rainfall Quantity and its Variation using Environmental Features. **Awards:** Outstanding Student Award 2019, Dept. of CSE.
Leadership: ***Chair (Head - Operations)***, Association of Students for Computer Science Information Interchange; ***Event Manager***, Anokha Techfest.

SKILLS

Programming	Python, C, C++, R, Java
Packages/Frameworks	TensorFlow, Keras, Scikit-Learn, NumPy, SciPy, OpenCV, Pandas, Pickle, Matplotlib

EXPERIENCE

Softsquare — Remote
Summer Machine Learning Intern — Jun 2020 - Present

- **Neural Machine Translation System for Indian and European Languages using Attention Mechanism**
  - Developed an application (using Python) for translating text from Indian languages (Tamil and Hindi) to English, and vice versa. Similarly, for translating text from European languages (Spanish and French) to English, and vice versa.
  - Used the Bahdanau and Luong Attention-based Encoder-Decoder model for translation between languages, and also used the Transformer model. Also, compared the results between all the models using the BLEU metric (Bilingual Evaluation Understudy).
- **COVID-19 Face Mask Detection using Deep Neural Networks**
  - Developed a sub-module for detecting the faces in a given video using pre-trained weights from RetinaFaceMask paper. The detected faces were compared and analyzed for picking the unique ones and sending them to the Salesforce cloud for an Einstein classifier to classify whether the person in the image was wearing a facemask or not. The classified result is sent to Einstein Analytics for the client to take action upon.
- **COVID-19 Social Distance Violation Detection using Deep Neural Networks**
  - Developed a sub-module for Social Distance Violation using Yolov3 Object Detection, where the distance between the predicted bounding boxes is calculated using the SciPy Spatial Distance package. The count of violations is sent to the Salesforce cloud for Einstein Analytics.

RESEARCH PROJECTS

Personalized System for Human Gym Activity Recognition using an RGB Camera (Paper) — Sep 2019 - Dec 2019

- Developed a personalized system capable of recognizing a list of gym activities and providing feedback on the correctness of the joint movement in the workout and the number of repetitions performed by the user with the help of an android application.
- Pre-processed data and implemented various classification models for classifying the gym activity performed by the user. Also, implemented a repetition counter module and correctness of the workout module using Local Minima analysis and Dynamic Time Warping.

Estimation of Rainfall Quantity using Hybrid Ensemble Regression (Paper) — Feb 2019 - Apr 2019

- Estimated rainfall in all the districts of Tamil Nadu, India using ensemble regression methods such as Random Forest which were combined using ensemble techniques such as Stacking and Blending.
- Optimized the ensemble regression methods using hyperparameters such as number of estimators, etc and built both versions of Stacking based hybrid ensemble regression models (repeat = 1 and repeat = 10).

Forecast of Rainfall Quantity and its Variation using Environmental Features (Paper) — Sep 2018 - Jan 2019

- Used regression methods such as Polynomial Regression to build rainfall prediction models such as District-Specific model, Cluster-based model, and Generic-regression model to predict rainfall for each district in Tamil Nadu, India.
- Optimized regression methods such as Decision Tree Regression and Polynomial Regression for building District-Specific Model and Generic-Regression Model. Also, analyzed the variation in rainfall in all the districts using cluster-based analysis such as Elbow method.

CERTIFICATIONS

- Deep Learning Specialization (deeplearning.ai), Coursera
- Machine Learning Foundations - A Case Study, Coursera
- Python for Everybody (Python Specialization), Coursera