Ramkumar Sivakumar

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EDUCATION

San Jose State University, United States Aug 2021 - Dec 2022
MS in Artificial Intelligence CGPA - 3.95
Coursework: Advance Data Mining, Math Foundations for Decision and Data Sciences, Recommender Systems Computer Vision, Deep Learning, Big Data Engineering, Machine Learning, NLP

SRM Institute of Science and Technology, Chennai, India June 2016 - May 2020
B.Tech in Information Technology (ABET Accredited) CGPA - 8.3
Coursework: Machine Learning, Database Management System, Management Information Systems, Algorithm Design and Analysis, Cloud Computing, Data Structures

TECHNICAL SKILLS

Languages : Python, SQL, C++, R Programming, C, JavaScript, Java
Tools/Framework: TensorFlow, PyTorch, NumPy, Pandas, Sci-kit Learn, Keras, OpenCV, Tableau, PowerBI, Git, Jupyter, Flask, Excel, RASA, Apache Spark, Microsoft Azure, Hadoop, Linux, Matlab, Azure, AWS

WORK EXPERIENCE

TEACHING ASSISTANT - APPLIED PROGRAMMING | San Jose State University, CA Sep 2022 - Dec 2022
- Guide undergraduate-level students in applications of Artificial Intelligence using Python.
- Assist students in applying ML libraries during lab sessions and office hours.

BUSINESS INTELLIGENCE INTERN (DATA SCIENCE) | Veritas Technologies LLC, CA May 2022 - Aug 2022
- Built Machine Learning models and recommender systems for Veritas's products to identify cross-sell opportunities and optimize pricing strategy with cross-functional teams by modeling customer behavior.
- Constructed end-end ETL and ML pipelines in Azure with data from different sources using SQL and PySpark and reduced the cost of spark instances by optimizing the model's runtime by 50%.
- Designed interactive Power BI dashboard/API with python scripts to visualize and identify sales opportunities for business. This enabled teams to interpret product associations and find sales opportunities faster.
- **Winner of Intern Project Showcase** competition, where Veritas' interns in the US showcase their projects.

RESEARCH INTERN | Indian Institute of Technology, Madras Jan 2020 - Feb 2020
- Implemented an exploratory analysis on gate-level netlists of different TrustHub benchmarks (Hardware Designs) by collecting data through parsing and simulations.
- Built Machine Learning models to detect Trojan nets from Normal nets during the IC design phase with 90% TPR to enhance security.

PROJECTS

SEMANTIC Q/A SEARCH (Ongoing Masters Project) Aug 2022 - Present
- A local NLP search application to retrieve files and answer user queries semantically based on information extracted from documents using a BERT-based model and knowledge graphs.

HYBRID MUSIC RECOMMENDER SYSTEM Sep 2022 - Dec 2022
- Built a hybrid system to recommend songs with Sentence Transformers and KDTree to identify similar songs based on the lyrics, an SVD Matrix Factorization model to predict the "play count" of songs per user, and content-based collaborative filtering models to rank songs based on the metadata.
- The hybrid system predicted the play count of a song with an MAE of 0.4 and suggested songs with 43% accuracy on a custom evaluation method on test users.
- Designed a UI to recommend songs using streamlit.io API.

MASK2FACE USING U-NET GENERATIVE ADVERSARIAL NETWORKS Jan 2022 - May 2022
- Trained U-Net Deep Learning models using Tensorflow to generate facial features for masked human faces.
- Synthesized unmasked RGB and Grayscale faces for input images of masked human faces with an error rate of 0.3.
- Built an application to identify human faces with masks and synthesize facial features to identify the real person.

CRIME SAGE - LOS ANGELES CRIME PREDICTOR Sep 2021 - Dec 2021
- Developed a model that suggests the most probable crimes in a location with a travel safety index.
- Obtained an accuracy of 80% in predicting the top 3 probable crimes using Sequential Neural Networks using Tensorflow based on personalized features of the user.

ACCOMPLISHMENTS

PUBLICATION - (IEEE SPICES 2022)
"Deep Convolution Neural Network Analysis For Crop Growth Stages Prediction", Communicated to IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems 2022

PATENT - A SYSTEM FOR CROP GROWTH PREDICTION AND METHOD THEREOF
Indian Patent Office - 202041052748A