VINITHA MAHESWARAN

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EDUCATION

University of Massachusetts Amherst   **Expected Graduation: May 2023**
Master of Science in Computer Science   GPA: 3.9/4
Coursework: Neural Networks, Systems for Data Science, Data Visualization, Business Analytics, Applied Statistics

Indian Institute of Information Technology Design and Manufacturing, Kancheepuram   **Jul 2016 - Jun 2020**
Bachelor of Technology (Honours) in Computer Engineering   CGPA: 9.29/10
Coursework: Machine Learning, Big Data Analytics, Data Structures and Algorithms, Database Management Systems

SKILLS SUMMARY

Programming Languages: Python, R, SQL, C++, C, Java, Embedded C, MATLAB, HTML, CSS
Libraries: Tensorflow, Keras, PyTorch, Numpy, Pandas, Scikit-Learn, Matplotlib, Ggplot2, NLTK, spaCy, OpenNLP, Gensim
Frameworks & Tools: Tableau, AWS, Flask, PostgreSQL, Linux, Git, Android Studio, Django, Hadoop, Spark, MS Office

WORK EXPERIENCE

Analyst   **Tiger Analytics, Chennai**   **Jan 2020 - Jul 2021**
· Predicted likelihood of a company being liked by an Investment firm using **XGBoost classification** with a recall of **82%**.
· Developed an algorithm to automate the process of calculating the year-on-year growth in R and built a solution using **Regression** models to determine the optimal pricing and win-loss probability for a real estate logistics provider.
· Performed **Exploratory Data Analysis** (EDA), **Clustering**, and **Hypothesis Validation** to understand the growth patterns of consumer preferences and predicted sales drivers for a leading food and beverage manufacturer with **83%** accuracy.

Data Analytics Developer Intern   **TenthPlanet Technologies Pvt., Ltd**   **May 2019 - Oct 2019**
· Built a Marketing Automation solution that scrapes real-time news feed from the web using **BeautifulSoup** and **SerpWow API**, and generates actionable leads by applying various NLP techniques.
· Reduced pipeline speed from 15 to 5 minutes per input keyword, saving up to **12 hours** for lead profiling of 72 keywords/day.

Research Intern   **RISE Lab, Dept. of CSE, IIT Madras**   **May 2018 - Jul 2018**
· Experimented various ML models on **Big Data** using **RStudio** and **PostgreSQL** and performed EDA to analyze data sets.
· Improved prediction accuracy of data sets by an average of **10%** and created **Tableau** dashboards for analytical purposes.

PROJECTS

Convolutional Neural Network (CNN) Pruning - *Python, Pytorch, Google Colab*   **Nov 2021 - Dec 2021**
· Performed one-shot pruning and iterative pruning on a **ResNet-18** model optimized for image classification tasks using CIFAR-10 dataset to achieve maximum sparsity while preserving task accuracy.
· Achieved **91.29%** accuracy after pruning 90% of the connections, which is comparable to the original accuracy of 93.07%.

Melanoma Classification Using CNN - *Python, Keras, Google Colab, OpenCV*   **Sep 2021 - Dec 2021**
· Developed three AI models - Support Vector Machine (SVM), Convolutional Neural Network and ResNet-152 to classify different skin lesions, detect Melanoma with high accuracy, and perform comparative study.
· Identified ResNet-152 as best performing model with **92%** accuracy on the testing dataset of 5300 dermatoscopic images.

Legal Document Analytics and Headnote Modeling - *R, Python, Gensim, spaCy, OpenNLP*   **Oct 2019 - Jun 2020**
· Facilitated an efficient system for the legal community to find similar legal judgments to a given case and model headnotes.
· Explored various NLP techniques such as Jaccard Similarity, Latent Dirichlet Allocation and Jenson-Shannon distance, Latent Semantic Indexing and Cosine Similarity, and **Word2Vec** to measure document similarity and compared the results.
· Implemented an **Encoder-Decoder seq2seq** model using Recurrent Neural Networks for the abstractive summarization of documents and the generated headnotes achieved a **ROUGE** n-recall score of **71.26**.

Student-Faculty Advisor-Parent Interaction Android App - **MySQL, PHP, WampServer**   **Jan 2019 - Apr 2019**
· Built an Android application to manage interactions between the students, faculty advisors and parents by using a **MySQL** backend and **PHP** based query processing.

ACHIEVEMENTS & POSITIONS OF RESPONSIBILITY

· **Winner, EHIPASSIKO 2019:** Prototype presentation at Industry Open House with 40 companies cutting across five industry verticals. Won the most innovative product idea award for 'Lite8' product, among 240 participants.
· **Robotics Club Core 2018-19, IIITDM Kancheepuram:** Organized various robotics competitions and Arduino quizzes, led Arduino workshops and managed weekly sessions.
· **Student Mentor 2018-19:** Provided guidance to first-year students under the University Mentoring Program.