

HEMA DEVA SAGAR POTALA

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EDUCATION

¹Master of Computer Science | **Texas A&M University**, College Station | GPA: 4/4 | Jan 2022 - Present.
Dual Degree in Mechanical Engineering | **IIT Kharagpur - India** | GPA: 8.67/10 | Jul 2012 - May 2017

WORK EXPERIENCE

Deloitte Consulting India Private Limited

Hyderabad, India

Role : Consultant, Applied AI

June 2017 - Dec 2021

Solution to aid nurses in reviewing medical documents | Health Insurance Client

- Developed machine learning components to categorize medical records and highlight pertinent information for nurse review in a claims processing solution.
- Explored and leveraged pre-trained models, bayesian optimization and fuzzy matching for the solution.
- Proposed solution reduced the claim processing time from 25 minutes to 3 minutes per document.

Cyber-Attack Detection | Oil and Gas Client

- Developed and implemented a text classification model to assess potential cyber attacks on plant controls. Utilized TF-IDF, Word2Vec, Boosting machines, CNNs, and ensemble techniques for optimal accuracy.
- The solution successfully identifies potential threats, mitigating the risk of business operation disruption, which could otherwise result in a loss of up to \$5 million per day.

Optimization of delivery trucks | Oil and Gas Client

- Implemented a heuristic model that determines the optimal number of trucks and arranges products for efficient deliveries, considering diverse constraints.
- Utilizing this solution, scheduling time was dramatically reduced from 16 hours to only 15 minutes

Audience Attention Gauging tool | Internal Product Development

- Created the tool's object detection module for gauging audience engagement during presentations using video recordings of their field of view. Employed OpenCV, R-CNN and SSD for the solution
- The tool was utilized to improve presentation strategies for optimal audience engagement.

Recommendation Engine | Tele-communication Client

- Implemented the Gaussian Missing Data model, which takes in historical customer usage and subscription data in the form of a vectorized Hankel matrix and generates recommendations for the future.
- Designed solution increased the revenue by 8%, during a testing phase of 2 month, for 10M user base.

PROJECTS

- Explored Compositional Neural Radiance Fields, CNeRF, to generate portrait images and then manipulate various semantic regions within the portrait | Computer Graphics Project| Git
- Built low light image enhancer by estimating image specific enhancement curves using a light weight deep neural network. Explored non-reference loss like spatial consistency, exposure control etc. and their effect on the output | Computational Photography Project| Git
- Explored Normalization Free ResNets with CIFAR | Deep Learning project | Git
- Studied the effect of Knowledge distillation on bias with Bert model | NLP Project | Git
- Built the search engine back-end for an online archiving application | Software Engineering project | Git
- Developed a Neural Machine Translation framework using seq-to-seq architecture | Self-project | Git
- Explored the capability of ML models in diagnosing engine misfire | Dual Degree Thesis | Publication

SKILLS

Languages & Frameworks : Python, C++, Ruby, SQL, Django, Rails, CSS, HTML, JS

ML Libraries & Frameworks : Keras, PyTorch, Scikit-Learn, OpenCV, Huggingface, Spacy, Scipy

Courses : Data structures & Algorithms, Software Engineering, Machine Learning, Deep learning, NLP, Computer Graphics, Computational Photography

ML Algorithms : Linear Regression, Logistic Regression, SVM, Random Forest, Gradient Boosting Machines, Bert, TinyBert, R-CNN, SSD, ResNets, NFNet, Generative adversarial Networks, k-Means, Gaussian Mixture Models, Auto encoders, PCA, NeRF, SASRec, BERT4REC

¹Estimated graduation date is in Dec 2023