SREE GOWRI ADDEPALLI

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SUMMARY

Machine Learning Engineer with experience in Big Data, Computer Vision, Natural Language Processing, Cloud and ML Systems.

EDUCATION

Master's, M.S. Computer Science with ML Specialization **Sep 2018 - May 2020**
New York University, Courant Institute of Mathematical Sciences

Selected Coursework: High Performance Machine Learning, Deep Learning, Computational Cognitive Modelling (RL), Natural Language Processing, Computer Vision, Programming Languages, Big Data Systems, Advanced Databases

Graduate Teaching Assistant, New York University, Courant. **Jan 2019 – Dec 2020**
Teaching Assistant for Data Structures and Algorithms, Big Data Systems, Natural Language Processing.

Bachelor's, B.E Computer Engineering **Jun 2012 - May 2016**
Mumbai University **GPA: 3.9**

Selected Coursework: Distributed Databases, Parallel and Distributed Systems, NLP, Applied Mathematics

SKILLS

Languages: Java, Python, Scala, C++, JavaScript, Bash| **Unit Test:** Junit, Pytest | **Deep Learning:** Pytorch, OpenCV, CNN, Transformers | **Big Data:** Hive, Hadoop, Spark, Kafka, Oozie | **Databases:** MySQL, NoSQL |**ML Libraries:** NumPy, scikit-learn, Pandas, CUDA| **Cloud & CI/CD:** Docker, AWS, GCP, Azure, Kubernetes, Git. | **Other**: Grafana, Tableau, MLOps, Search and Recommendations, A/B testing| **Coursera** – Machine Learning

EXPERIENCE

Senior Machine Learning Engineer, Cisco, United States **October 2023 – Present**

- Working as part of Outshift (https://outshift.cisco.com/) for developing products using emerging technologies.
- Developing Generative AI gateway plugins to ensure privacy, security and observability for Large Language Model prompt responses using Natural Language Processing, AWS, Python, Scikit-learn, Pytorch, Flask.
- Working on Content Moderation, Malicious Code Detection on LLM.

Senior Artificial Intelligence Engineer, Target, **Advanced Machine Learning, United States** **Nov 2020 – Oct 2023**

- Developing tools and workflows for model training and inference. Built a model monitoring observability library for "Complete the Look" recommendations. End-to-End ML & Big Data Engineering for visual search and discovery driving 21M$ per year using Hive, Hadoop, Spark, Oozie, Kafka, Python, Bash, NumPy, Pandas, Grafana, Kubernetes, Slurm.
- Backend Engineering for Search, Ranking, Rules and Recommendations for complementary outfit boards.
- Hackathon winner, 2D to 3D content generation using Neural Radiance Fields (6 Month entrepreneurship Incubator) and presented to CIO (Chief Information Officer). Founding member of cross functional team with multiple stakeholders across 3D Creative production, Computer Graphics, Owned brands, Advanced Machine Learning, Supercomputing Array, Team Incubator with a projected AD of 6M$ per year using OpenCV, Pytorch, GPUs, Bash. Contributed to Open-Source framework NerfStudio.
- Presented Model Monitoring: Ensure Robust Machine learning systems in production at MLOps Conference, NY, July 2022.
- Mentored Junior TMs and presented paper discussions (Transformers) as part of Deep Learning paper reading group.
- Performance Award, Sept 2022, Grace Hopper Sponsorship, Sept 2022.

Associate Application Developer, ADP, New York **Aug 2020 – Nov 2020**

- Text (NLP) and Image extraction (Computer Vision) in documents using OCR techniques using tesseract.

Deep Learning Intern, **Etsy, New York** **June 2020 - Aug 2020**

- Object detection and segmentation research (supervised with Mask RCNN and weak supervision using CAM for localization) in Auto Crop for visual search (shopping) using Pytorch, OpenCV and GCP.

Machine Learning Intern, Amgen, California **June 2019 – Aug 2019**

- Auto-identification of potential endpoints by retrieving related adverse events in medical data records using semantic search engine and recommendation of diagnosis improving search by 7% using PySpark, NLTK, Pandas, NumPy, Elasticsearch.

Software Development Engineer 2, Diebold Nixdorf, Mumbai **Aug 2016 – June 2018**

- Full stack development for skype video call queuing which routed the VOIP call from hardware terminal to tellers of the bank using Pub-Sub Design Pattern using Java, C#, C++, AngularJs, Typescript, SQL, Jasmine, karma.
- Winner, R&D Hackathon, security application for offline based authentication and accessibility.

LEADERSHIP

- **NeurIPS** Volunteer**, CVPR** Sponsorship, **ECCV** Conference Sponsorship, **Hopper** Sponsorship (Grace Hopper), **Founder**, Lean-in circles with NYU WinC, **Program Coordinator** (Indian Women in Computing) and Chair of Global Committee, HackNYU
- **Artificial Intelligence Track Reviewer for GHC 2023.**
- **Open-Source Mentor- Artificial Intelligence Track, GHC 2023**
- **Responsible AI Hackathon, AnitaB.org Open-Source Mentor, January 2024**

RESEARCH PROJECTS

Deep Learning: Self Supervised Learning in Autonomous Driving Cars. [LINK] **Dr. Yann LeCun**

- Built self-supervised models for road map prediction using ResNet18, SimCLR and DeepLab with 73.57 accuracy. Built segmentation pipeline with self-supervised monocular depth estimation with depth maps, projecting 3D point clouds into 2D image space for object detection through Faster RCNN. Ranked 11th out of 58 teams.

Cognitive Modelling: Human Priors and Deep Reinforcement Learning. [LINK] **Dr. Brenden Lake**

- Modified the video game environment using semantics and affordances to explain relevance of human priors to compare human cognitive models and a RL agent with duelling DQN using pygame and python in flappy bird.

High Performance Machine Learning: Distributed Deep Learning [LINK] **Dr. Ulrich Finkler**

- Implemented Tiled Convolution in CUDA using CUDNN and C++. Implemented Distributed deep learning SGD on multi-GPU setup with profiling on the CIFAR dataset for high-performance ML.

A framework for measuring customer satisfaction and product recommendation for ecommerce **Dr. Sujata Khedkar**

- Aspect level sentiment using Python, Solr, Hadoop, NLTK, Stanford NLP Parser, SentiWordNet, Tkinter with search and recommendation. **Paper:** https://www.ijcaonline.org/research/volume138/number3/addepalli-2016-ijca-908757.pdf

Anomaly Detection in credit card transactions [LINK] **Dr Anasse Barri**

- Built a credit card anomaly detection system using the CRISP- DM process. Handled imbalanced dataset using Random Under sampling, Random Oversampling, Random Oversampling using SMOTE analysis.
- Clustered Data into fraudulent and non-fraudulent transactions using dimensionality reduction technique with t-distributed Stochastic Neighbor Embedding.
- Built machine learning models using Logistic Regression (93.65%), K-Nearest Neighbors (99.98%), Support Vector Machine (99.91%), Stochastic Gradient Descent (94.26%).
- Used Ensemble modelling technique and performed Voting Ensemble (95.36%), bagging with Random Forest Classifier (100%), boosting with XGBoost (98.34%) and AdaBoost (96.89%).
- Performed model evaluation and comparison of the models using Area under the ROC Curve (Accuracy) and time for speed of detection.