Sree Bhargavi Balija

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Education

University of California San Diego **March 2024**
Master of Science in Machine learning and Data science ***CGPA: 3.5/4.0***
Indian institute of Technology Hyderabad **July 2020**
Bachelor of Technology in engineering ***CGPA: 9.1/10***

Technical Skills

Languages: C/C++, Python, Java, Javascript, Angular, Kotlin, Prolog, Perl
Web Technologies/Frameworks: Google cloud, Android DB, Andriod studio, Docker, Firebase
Databases: Oracle SQL, MySQL
Data Science: Bert language models, Classical ML, DL, NLP, Explainable AI, Federated learning, Computer Vision, Deep generative models

Relevant Coursework

- Statistical learning
- Sensing and estimation
- Search and optimization
- Learning Algorithms
- Artificial Intelligence
- Deep generative models
- Data Mining

Job Experiences

ServiceNow, Software engineer | *Java, Js, Angular, Eclipse, Github* **June 2020 – August 2022**
- Worked on integrating multiple rest api's with ITSM workflows for adding virtual bot capabilities like Citrix cloud virtual systems access and Request item flow, also integrated the 10 topics with an NLU model for intelligent conversation flows driving 2 billion dollars of revenue every year.
- Designed and developed the success dashboard which provides a prebuilt analytics for 8 metrics like customer satisfaction score, cost savings etc to demonstrate the actual business value achieved through the top ServiceNow products.

Research Intern— Shiley Eye Institute | *Matlab, Python, C++* **Dec 2023 - Ongoing**
- Working on Deep learning model for the characterization of the optic disc phenotypes in glaucoma patients

Academic Projects & Research Experience

Federated learning clients side pruning through mixed precision quantization techniques **Sep 2023 - Ongoing**
- Working on novel client sided mixed precision quantization technique which out performs the hessian awareness spectrum quantization technique in terms of inference speed
- Built gap acceptance behaviour model using dynamic and static gap for autonomous vehicles using federated learning.
- Developed new method using conformal predictions which selects the most efficient clients for high global model performance.
- Working on client pruning methods based on dynamic and mixed precision accuracies client accuracies in federated learning setup.

Federated fine tuning of heterogeneous Large Language Models | *Python* **Dec 2023 - Ongoing**
- Developing a novel federated LLM technique using trained models from multiple decentralized nodes (Edge devices), each local model trained on their own local device data
- This framework is used to address privacy, data scarcity issues and specifically applicable for NLP tasks

Phone location detection | *Colab, Python* [code] **Jan 2023**
- Developed a prototype of a visual object detection system using Resnet, VGG16 Architecture to detect the phones from given images within a radius of 0.05 (normalized distance) centered on the phone

Interpretable Neural Additive Models to predict Coronary Heart Disease | *Python* [code] **March 2023**
- In this project,we have developed an interpretable ML model to predict a patient for 10-Year Risk of future coronary heart disease (CHD) and identified most relevant risk factors for heart disease
- Performed Comparative Analysis of Interpretable ML models vs State of the Art Models and observed that our NAM model had a better AUC score than DNN.

Accolades/ Online Certifications

- **Academic excellence award**, IIT Hyderabad **2018**
- **Deep Learning and Natural language processing** specialization, Stanford completed 3 out of 5 courses. **2020**
- UCSD ECE **Summer research internship** scholar, UCSD **2023**
- **Teaching Assistant**, Introductory courses in physics and chemistry departments website management **2018**
- Silver medal, International Master **Mathematics Olympiad** **2013**
- Student entrepreneurship association, UCSD **2023**
- Representive of IITH in social online innovation collaborative **hackathon** **2020**
- Achieved Skill development incentive program award, **ServiceNow** **2021**