KARTHIK PANSETTY

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA **May 2022**
Master of Science in Electrical and Computer Engineering
with a concentration in AI/ML systems **GPA: 4.0/4.0**
Relevant Courses : Introduction to Deep Learning, Machine Learning for Large Datasets*, Optimization, Computer Vision*, Image and Video Processing, Introduction to Machine Learning for Engineers, Estimation, Detection and Learning, Foundations of Privacy*. (*F21)

Indian Institute of Technology (IIT) Gandhinagar, India **May 2019**
Bachelor of Technology in Electrical Engineering with minor in Computer Science **GPA: 8.35/10.0**
Relevant Courses: Pattern Recognition and Machine Learning, Mathematical Foundations for Computer Vision and Graphics, Natural Language Processing, Applied Cryptography.

SKILLS AND INTERESTS

Skills Python, JAVA, MATLAB, C, SQL, Ruby.
Frameworks PyTorch, TensorFlow, Keras, Pandas, Scikit-learn, NumPy, SciPy, Matplotlib, NLTK, PySpark, OpenCV, Networkx, Amazon Web Services, Google Cloud Platform, Rails.

PROFESSIONAL EXPERIENCE

Engineering Development Group Intern May 2021 - August 2021
MathWorks *Natick, MA*

- Built a working prototype of MATLAB WebApps as a **user authored custom dashboard** on ThingSpeak.
- Implemented an OpenID Connect Provider for user authentication using MathWorks account as a part of ThingSpeak to bridge the gap between the MATLAB WebAppServer and ThingSpeak.

Machine Learning Engineer July 2019 - April 2020
HealthCloudAI *Bangalore, India*

- Developed sophisticated **Machine Learning models** from scratch to predict clinical diagnosis from unstructured clinical text in health records of patients using Tensorflow.
- Implemented a **recommendation system** to generate **personalized questions** based on history and demographics of patients.

RESEARCH EXPERIENCE

Research Assistant (Personalized Federated Graph Neural Networks) September 2021 - Present
Carnegie Mellon University *Pittsburgh, PA*

- Working on using different **Federated Learning** algorithms on **Graph Neural Networks** for tasks such as Graph classification, Node classification, Node and Link prediction using **personalized methods** in PyTorch.

Research Intern (GIcST: A Natural Language Framework to Identify Themes Differentiating Cohort Subgroups) May 2018 - June 2019
University of Notre Dame *South Bend, IN*

- Developed a Generalized Identification of Cohort Specific Themes (GIcST) framework to **extract themes differentiating texts** of two generalized population sub-groups while accounting for overall population-level experiences.
- This framework **automates the process of discovery** of psychological themes with respect to outcomes from unstructured psychological intervention texts to **personalize interventions** and gain insights surrounding patient outcomes.

SELECTED PROJECTS

Federated Optimization in Heterogeneous Networks Feb 2021 - May 2021
Course : Optimization, Carnegie Mellon University

- Reproducibility study to understand the comparison between the **Federated Learning** algorithms **FedProx** and **FedAvg** in highly heterogenous settings showing an **absolute improvement of around 19%** for the FedProx algorithm.

Quantization of CNN based Language Models Feb 2021 - May 2021
Course : Intro to Deep Learning, Carnegie Mellon University

- Explored **Quantization** techniques on CNN-based Language models demonstrate that quantization can be used to achieve a model with a **4x reduction in size** with only a 2% loss in performance on Wav2Letter Language model.