

# 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 Machine Learning for Engineers, Image and Video Processing, Introduction to Deep Learning, Optimization, Estimation, Detection and Learning, Computer Vision\*, Machine Learning for Large Datasets\*, 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.

## 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)

August 2021 - Present

*Carnegie Mellon University*

*Pittsburgh, PA*

- Working with Prof. Carlee Joe-Wong to perform **Federated Learning** on tasks such as Graph classification, Node classification and Node prediction using **personalized methods** on **Graph Neural Networks** using 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 conditions and outcomes.

## SELECTED PROJECTS

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.

Federated Optimization in Heterogeneous Networks

Feb 2021 - May 2021

*Course : Optimization, Carnegie Mellon University*

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