Pranav Chellagurki

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EDUCATION

San Jose State University — **San Jose, CA**
Master of Science in **Artificial Intelligence** — Expected: 2024
Courses: Machine Learning, Math for Decision, and Data Science
Deep Learning, Artificial Intelligence, Data Mining
Graduate Writing Assessment Requirement, DBMS
Operating System Design, C++ Data Structures, and Algorithms,
Natural Language Processing

Visvesvaraya Technological University — **Bangalore, IN**
Bachelor of Engineering in Electronics and Communication Engg. — 2016 - 2020

SKILLS

Programming: Python, C++
Topics: Supervised Learning, Unsupervised Learning, **Explainable-AI (XAI)**, Deep Learning / Neural Networks,, Data Analysis, **Language Models,** Software Engineering, Machine Learning, Computer Vision, **NLP**, **Transformers**, **Sequence Models**, **Generative Models**..
Misc: NumPy, TensorFlow, PyTorch, ROS, **SpaCy**, **HuggingFace**, OpenCV, Pandas, Scikit, **NLTK**

WORK EXPERIENCE

Capria Ventures LLC, Seattle, USA
Generative AI Fellow (Language Systems) — **June 2023 - Aug. 2023**

- Executed the integration of advanced NLP techniques from recent academic literature, enhancing system capabilities in understanding and processing natural language.
- Engineered bespoke NLP solutions, employing deep learning, transformer models, and semantic analysis to address nuanced linguistic challenges.
- Exhibited mastery in NLP-specific frameworks and languages, including Hugging Face Transformers, NLTK, spaCy, and GPT models, for robust NLP model development.
- Led the end-to-end management of NLP projects, focusing on algorithmic refinement, model training optimization, and aligning output with complex linguistic requirements.

Invento Robotics, Bangalore, India
Computer Vision Research Intern Feb. 2021 - Jan 2022

- Built the **Machine Learning** stack used on the flagship "Mitra" robot.
- Used **statistical methods** and **visualization techniques** to uncover how ADL affects the likelihood of a fall.
- Deployed **Convolution Neural Network** Models to automate decision-making in Senior care Facilities. The model **predicts** a fall before it can take place, by analyzing gait and movement patterns.
- Created **Interactive Conversational Agents** using **AWS Polly** and **DialogFlow**.
- Worked on **scene understanding** to boost the accuracy of fall detection.
- Combined YOLO **Object Detection** Framework with a lightweight **pose model** to increase the **accuracy** of **fall detections by 20%**. The model analyzes the overlap between the fallen person and different objects of interest before making a decision.

Invento Robotics, Bangalore, India Mar. 2022 - Jun. 2022
Teaching Assistant, Machine Learning (Remote)

- Teaching assistant (TA) for the "Machine Learning for Engineers" course.
- Created **original** notebooks on topics such as **Neural Networks**, **Regularization**, **Clustering**, **Boosting**, **Regression, Decision Trees, Bias, and Variance,** etc**.**
- The course was recently taught at **Motorola**.

PROJECTS

Vision Genie Nov. 2020 - Jan. 2021

- Created an interface for the visually impaired.
- Works on principles of **Human-Computer-Interaction** (HCI). Combines a pre-trained **speech model** with an Object Detection model to guide the user to the target using voice commands.
- The application works in real time by dividing voice instructions from Object detection into two separate **threads.**

LightGPT April 2023

- Created a PyTorch-based **Transformer decoder** model.
- It allows users to train custom GEN AI models using their own text data.
- Optimized for CPU instances, it is lightweight and efficient.
- LightGPT abstracts the complexity of the transformer while leveraging its power.

Healthcare - Artificial Intelligence - Prevention. (Invento robotics**)** Feb. 2021 - Nov. 2021

- **Created a system that eliminates the need for continuous human supervision** during routine health checks.
- The model replicates the tests proposed by CDC and calculates the possibility of a fall score based on the tests.
- It uses the MediaPipe pose model to draw inferences from 32 human joint positions.
- The model is hooked to a Django API which **alerts healthcare providers** if anomalies are detected.

Exploratory Data Analysis - Medical dataset. (San Jose State University**)** Sept. 2022

- Performed Data Processing and Exploratory Data Analysis (**EDA**) on the Medical Insurance dataset in **R**.
- Computed **Principal Component Analysis** (**PCA**) for feature extraction and dimensionality reduction.
- Built inference models - **Regression**.

CERTIFICATES & ACHIEVEMENTS

TensorFlow Developer Professional Certification

- Foundational principles of Machine Learning and Deep Learning
- Building models in TensorFlow 2.x
- Strategies to avoid overfitting such as **Regularization** and **Dropout.**
- Neural Network techniques to solve **Natural Language Processing (NLP)** problems.
- Recurrent Neural Networks (**RNN**), Gated Recurrent Units (**GRU**), Convolution Neural Networks (**CNN**) Long Short Time Memory (**LSTM**)

Semi-Finalist, XPRIZE

- Team member - Invento Robotics
- Collaborated on building a virtual avatar. Competed with highly resourceful teams from different parts of the world.
