Kusum Paraag Grandhi

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GitHub
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Education

Bachelor of Technology: Computer Science and Engineering **2019 – 2023**
SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India 603203 CGPA: 9.2

Higher Secondary School (12th class) **2018 - 2019**
Amity International School, Sector – 46, Gurugram, Haryana, India 122018 Percent: 80%

Experience

Listed INC: AI Engineer **Mar 2023 – Ongoing**

- Created Image to Instagram Caption & Hashtag Generator, Created algorithm to boost engagement on users posts
- Worked on Deploying a smart support agent to completely replace necessity of support team
- Implemented an LLM to create Automatic email response for any email to support customer retention. Created the product to require no human intervention.
- Accomplished a Framework to translate any language to Indian Languages with TTS support translation.
- Created TTS and Voice Cloning Pipeline to create a proper dubbing of any input audio

University of Toronto: Research Intern **July 2022 – Sept 2022**

- Topic of Research: Patterns of communication in conversational agent.
- Researched in the field of Human Computer Interaction(HCI), NLP and Automatic Speech Recognition
- Implemented a Voice Agent with disfluencies to sound human like and to transform interactions with humans.
- Technologies mainly used are T5 transformer, Google Cloud text-to-speech, Flask, N-gram model

Samsung: PRISM Research Intern **Dec 2021 – Jun 2022**

- Topic of Project: Artwork Search
- Worked on Computer Vision
- Implemented a Reverse Image search to find artworks that have similar characteristics
- Technologies used are AutoEncoders, Vgg16, Semantic and Binary Hashing and Image processing

AllThingsConnected: AI/ML Intern **Mar 2021 – Sept 2021**

- Topic of Project: Speech Analysis
- Worked on ASR, NLP, Data Science and Machine Learning
- Implemented a system to analyse speech features by studying f0 and f1 transforms along with RMS transform
- Tech Stack used is TensorFlow, Librosa, Flask_socketio, Google cloud API, Rev API

Positions of Responsibility

SRM Machine Intelligence Community: Community Executive **Feb 2021 – Current**

- Actively participated in Research paper reading sessions and contributed to club events
- Worked on paper reimplementation and Paper discussions

Beeclust: Multi Robot Systems Lab (Software R&D associate) **Aug 2019 - Current**

- Created Optical Character Recognition and studied the different methods like sliding window and YOLO.
- Applied RCNN to analyse historic stock prices and generate predictive output.

IOT Alliance: Machine Learning member **Nov 2020 – Nov 2021**

- Implemented Exercise Guide as a Computer Vision Projects with OpenCV and Pose detection.
- Administered Intent based Chatbot in TensorFlow along with user interface in Flask

Technical Skills

Languages: Python, C++, C
Libraries/Frameworks: OpenCV, Pillow, Flask, Django, Pytorch, TensorFlow, SciKitLearn, NumPy, Pandas, Flask_SocketIo, Matplotlib, Librosa, PyAudio, PyDub
Machine Learning Algorithms: Linear regression, Multiple regression, K-Nearest Neighbours, Decision trees, Logistic regression, K-means, Hierarchical clustering, SVM (Support Vector Machine)
Deep Learning: DNN, CNN, GANs, RNN, LSTM, Transfomers, Natural Language Processing, Transformers, UNET, BERT, GPT
Other Resources: REST APIs, Ubuntu, Git, MySQL, JS, Google Cloud Speech to Text, web Sockets, Tkinter

Projects

1. **SRGAN**
   - Pytorch implementation of the "**Photo-Realistic Single Image Super-Resolution Using a Generative Adversarial Network**" paper
2. **Emotion Detection**
   - Used RNN and LSTM to find the most accurate model to Classify text into 5 different emotions
3. **Chatbot**
   - A friendly neighbourhood chatbot. powered by TensorFlow, NLTK, Flask. It has the ability to understand intent and reply, also uses APIs to give and retrieve important information
4. **Optical Character Recognition**
   - Made using OpenCV and tesseract, it can effectively retrieve any printed texts from images
5. **Retina Blood Vessels Segmentation**
   - Deep Learning project used for retina image classification based on U-Net to detect retinal vessels.
6. **Stock Predictor using CRNN**
   - Model to predict a future stock based on the past 10-year trends using TensorFlow and Matplotlib
7. **Customer segmentation using K-means**
   - Machine Learning project to cluster customers based on the type of the customer. Built using TensorFlow, Matplotlib, Seaborn, NumPy, Pandas

Accomplishments

Amazon ML Challenge

- Created ML models using NLP to process the raw product data and club them into categories.

MozoHack 2.1

- Idea: Derive useful information from meetings along with links to get a head start in your work.
- Pytorch, Spacy, Summarizer, NER, Sentiment Analysis, Semantic Analysis

TreeHacks 2021(Stanford)

- Idea Implemented- ***Remote*:** Connecting people with matching emotions (emotion analysis).
- NLTK, TensorFlow, LSTM

Hacktoberfest 2020

- Contributed to open source: added Fashion MNIST, BMI calculator (GUI using Tkinkter)

HackYuva 2020

- Built a website to Dynamically assign mentors to students based on their skills to benefit their efforts
- Html, CSS, PHP, TensorFlow
- Shortlisted in the Top 8 teams.

Odyssey of Mind (Jan 2017)

- Built a human like Robot using Arduino to play a role in a skit. Achieved *First place at National level* and *qualified for international level* in *Odyssey of the Mind* program at Michigan State University, USA

Certifications

- ✓ Introduction to Programming using Python: (Udemy) – Aug 2019
- ✓ Python 3 Programming Specialisation: University of Michigan (Coursera) – Jun 2020
- ✓ Databases using Python: University of Michigan (Coursera) – Jun 2020
- ✓ Machine Learning with Python: A Practical Introduction: IBM (EDX) – Aug 2020
- ✓ Introduction to TensorFlow for AI, ML, & Deep Learning: DeepLearning.ai - Sep 2020
- ✓ NLP in TensorFlow – DeepLearning.ai – Jan 2021
- ✓ Build Basic Generative Adversarial Networks: DeepLearning.ai - Aug 2021
- ✓ Machine Learning – Stanford University (Coursera) – Oct 2021