Sanidhya Mangal

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Education

MEDI-CAPS UNIVERSITY Indore, India
B.Tech, Computer Science (Artificial Intelligence) CGPA 8.41/10 June 2020
Relevant Coursework: Artificial Intelligence, Calculus and Discrete Mathematics, Natural Language Processing, Pattern Recognition, Networking, DBMS, Data Structures and Algorithms, Computer Architecture,
Teaching Assistantship: Machine Learning, Computer Graphics and Multimedia

Experience

EngineerBabu Indore, Madhya Pradesh
Machine Learning Engineer June 2020 – Present

- Worked along a research group to design a Computer Aided Diagnosis (CAD) for diagnosing lung and colon cancer histopathological images using Deep Convolution Neural Networks (CNN)
- Presently leading a team of 6 developers to develop a deep learning model to verify people using selfie and 3D video - By far reduced the inference time by 30% from predecessors and bumped confidence to 86%. Also, served these models using Django Based REST APIs
- Developing framework for Edge AI Video Analytics and Object tracking on top of Tensorflow and Django Rest Framework.

Greater Kailash Hospitals Indore, Madhya Pradesh
Research Intern January 2020 – April 2020

- Designed the shallow CNN for diagnosing pneumonia and malaria using X-Ray and blood slides respectively with an area under curve (AUC) of 0.94.
- Model was deployed as a web app which worked as a second opinion for the doctors, reducing false negative by 23%.

Through Thoughts Indore, Madhya Pradesh
Summer Intern (Machine Learning) June 2019 – August 2019

- Modelled a skin cancer lesion detection system with the help of transfer learning method (CNNs).
- Implemented MobileNetv2 (pretrained model) using Python and TensorFlow to achieve 89% accuracy.

Publications

CNN for diagnosing colon and lung cancer histopathological images June 2020 – September 2020

- The objective is to diagnose lung and colon cancer using histopathological images, all the trained models are accurate enough to perform early screening and diagnosis. arXiv Link: http://bit.ly/lccancer

LSTM vs. GRU vs. Bidirectional RNN for script generation June 2019 – August 2019

- Used distinct sequence-to-sequence models to generate scripts for TV series, The model can generate dialogues for any number of episodes, available on arXiv. Link: http://bit.ly/script_generation

LSTM based Music Generation System January 2019 – March2019

- The objective is to generate a suite of musical notes with the help of a single layer of LSTM. The model is capable of generating music in MIDI file format, available on arXiv. http://bit.ly/lstm_music

Projects

GAN December 2020 – Present

- A lightweight framework for tooling Generative Adversarial Networks, built on top of Tensorflow.
- Currently, in alpha mode continuous work is carried out to add more models and architectures.

GAN Farm July 2018 – September 2019

- This project consists of multiple DCGAN architectures and various training strategies such as WGAN, Vanilla GAN, LSGAN, etc on fashion mnist dataset. In addition to this same architecture was used for generation of anime faces and pokemons.

Image Colorization using GANs September 2019 – December 2019

- Developed an automated image colorization using GANs similar to deoldify, as a major thesis out performing its predecessors such as Unet. Multilayer CNN architecture implemented using core TensorFlow.

Image Generation using Generative Models December 2018 – January 2019

- The main objective of this project is to demonstrate the generative nature of variational autoencoders (VAE).
- Model was trained on MNIST handwritten digits to generate handwritten digits of 28x28 px with an accuracy of around 69%.

Leadership and Activities

Google Explore ML Facilitator June 2019 – March 2020

- One of the fortunate 60 from India to facilitate the Machine Learning ecosystem in central India. Trained hundreds of students on cutting-edge technology i.e., Machine Learning, Deep Learning and TensorFlow, harboring their interest in academia research.

Amazon Alexa Student Influencer June 2019 – June 2020

- First batch of India advocating voice-first technologies. Leading the chapter in central India, impacting and training students and professionals on developing voice-first products using Alexa Skill Kit.

Microsoft Student Partner March 2017– June 2020

- Kickstarted a Microsoft community in my university, organizing workshops, hackathons and events. Being ML enthusiast, trained hundreds of student developers on cloud technologies and Azure ML studio.

Other Projects 2016 – 2019

- Style Transfer, to transfer style of painting to image using pretrained VGG16.
- Wikipedia like Article generation using LSTM and seq-to-seq models.
- Neural Machine Translator to mimic Google's (GNMT) for translating English to Hindi text using the Transform network.
- Developed a ML based solution to predict whether a person will donate in an NGO or not.
- Air Quality predictor to check how safe it is to carry your kids out.
- Stock Price Predictor to perform time series prediction on Apple INC stocks prices.
- GPS Car Pooling, to suggest whether to pool cars or take public transport based on environment.
- Date-Matcher, trained on a dataset of speed dating to predict the probability of landing a date.
- Color Compression using K-Means clustering Algorithm.
- Text Classification on newspaper articles using TFIDF and Multinomial Naïve Bayes algorithm.
- DeepFlow, a deep learning library to teach deep learning concepts to novice.

NOTE: Many more projects can be found at https://github.com/sanidhyamangal

Extra-Curricular Activities

- Runner up of VoidHacks under healthcare track to analyze and predict the graph of chronic diseases.
- Compere in various cultural events in college such as Mélange (fashion show), Symphony.
- Recipient of Google Skill India scholarship and Facebook's secure and private AI scholarship on Udacity.

Skills & Interests

Technical Skills: Machine Learning, Deep Learning, Web Development, Docker, Kubernetes, Database Management, Version Control.
Frameworks and Languages: TensorFlow, Keras, Scikit-learn, Angular, Python, C/C++, SQL, Django, Flask.
Interests: Cinema, Traveling, Open Source development and academia research.