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 Discreet 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%
- Developed a solution to determine pH level and oil percentage on skin for Edeanor using digital image processing - Reduced manual inference to almost 0

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

COV-SARS2 Detection March 2020 – April 2020

- A deep learning-based model to classify Chest X-Ray images into COV-SARS2 positive and negative.
- Used Dense Net architecture for transfer learning, recorded AUC of 0.63.

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%.

Student Intervention system July 2018 – September 2019

- The main objective of this project was to explore various supervised machine learning algorithms: Support Vector Classifier, Random Forest, Logistics Regression, K-Nearest Neighbors and Gaussian Naïve Bayes. to predict whether a high school student requires special care or intervention to pass a particular term.

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.