ARPIT KAMAL

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PROFESSIONAL EXPERIENCE

***FORTECH ENERGY INC.* (*USA*)** *Feb 2019 – July 2019*

Artificial Intelligence Internship:

- Understanding all AI models (linear regression, logistic regression, Support Vector Machine, decision tree, random forest, k-nearest neighbor, k-means clustering)
- Data Modeling.
- Apply models on real-world data.

PROJECTS

Writing Shakespeare poetry using LSTMs: (Python, TensorFlow) February 2020

- I have implemented Long short-term memory (**LSTM**) on corpus of Shakespeare sonnets which helps to create Shakespeare poetry.
- Training data Accuracy: 80%

Sarcasm detection: (Python, TensorFlow) February 2020

- Training data Accuracy: 87%, Validation data Accuracy: 81%.
- After learning Tokenized words and Embedding concept. I have built a classifier on News Headlines Dataset for Sarcasm Detection from **Kaggle.**

Rock Paper Scissors: (Python, TensorFlow) *November 2019*

- Build a multi-class classifier to recognize Rock Paper Scissors containing images from a variety of different hands.
- Training data Accuracy: 76%, Validation data Accuracy: 76%.
- After learning the concept of a multi-class classifier. I have implemented this concept on Rock Paper Scissors dataset which contains 2,892 images of diverse hands in Rock/Paper/Scissors poses using Convolutional Neural Networks in TensorFlow.

Sign Language MNIST: (Python, TensorFlow) *November 2019*

- Build a multi-class classifier to recognize sign language.
- Training data Accuracy: 74%, Validation data Accuracy: 86%.
- I have implemented the concept of a multi-class classifier on real-world dataset, Hand Gesture Recognition Tasks with 26 classes of letter from **Kaggle**.

Cats vs Dogs using Transfer Learning: (Python, TensorFlow) *November 2019*

- Classifying Cats or Dogs with the help of transfer learning.
- Training data Accuracy: 92%, Validation data Accuracy: 95%
- I have learned that with the help of transfer learning, rather than training model from scratch which needs lots of data and time to train, instead, download an open-source model that someone else has already trained on a huge dataset and use those parameters as a starting point to then train your model which is quicker way to be able to reach higher levels of accuracy.

Horse vs human with augmentation: (Python, TensorFlow) *November 2019*

- Predicting whether the image contains a human or horse image using Convolutional neural network.
- Training data Accuracy: 86%, Validation data Accuracy: 73%
- I have learned that data augmentation is a widely used tool in deep learning to increase the dataset size by being able to rotate the image and being able to skew the image which takes place in memory as they're being loaded into the neural network for training without overriding the data.

Cat vs Non-Cat classification: (Python) *July 2019*

- Classification of Cat vs Non-Cat using 4-layer neural network.
- Training data Accuracy: 98%, Validation data Accuracy: 80%
- I have implemented this project without TensorFlow which helps to dig deep into the working of neural network that how forward and backward propagation works in a neural network.

Machine Learning Algorithms with projects: (Python) February 2019

- Linear Regression: To predict the price of houses based on some features.
- Logistic Regression: To predict a particular user whether he has clicked on an Advertisement on a company website or not.
- K Nearest Neighbors: Created a model that directly predicts a class for a new data point based on features.
- Decision Trees and Random Forest: Build a model to make a prediction for an investor whom he would like to invest based on their profile of paying back.
- Support Vector Machines: Support vector machine is used to predict whether a tumor is malignant or benign.

CERTIFICATES

- **Backend Development Course from AcadView** — August 2017 – Till Date
- **Frontend Web Development Course from AcadView** — December 2017 – Till Date
- **Machine Learning from Stanford University** — *July 2019 – Till Date*
- **Neural Networks and Deep Learning from deeplearning.ai** — *July 2019 – Till Date*
- **Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization from deeplearning.ai** — *September 2019 – Till Date*
- **Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning from deeplearning.ai** — *October 2019 – Till Date*
- **Convolutional Neural Networks in TensorFlow from deeplearning.ai** — *November 2019 – Till Date*
- **Natural Language Processing in TensorFlow from deeplearning.ai** — February 2020 – Till Date

EDUCATION

Punjabi University, Patiala
Bachelor of Engineering -- Computer science and engineering — *August 2015 – June2019*

Central Board of Secondary Education
12th — *March 2014 – March 2015*

AWARDS

92.8% Score Achieved in Machine Learning by Andrew Ng
95.8% Score Achieved in Neural Networks and Deep Learning
99.2% Score Achieved in Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
100.0% Score Achieved in Convolutional Neural Networks in TensorFlow
100.0% Score Achieved in Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
96.9% Score Achieved in Natural Language Processing in TensorFlow
Participated in hackathon: Top 15 out of 30 Teams