Vamshi Kumar Kurva

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Info

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Github `https://github.com/vamshikumarkurva`

Education

2015–2017 **Indian Institute of Space Science and Technology, Kerala**
M.Tech in Machine Learning and Computing, *CGPA* – ***9.1/10***.
- **Relevant courses:** Pattern Recognition and Machine Learning, Reinforcement Learning, Neural Networks, Data Mining, Matrix Computations, Applied Statistics, Optimization Techniques, Computer Modeling and Simulations, Discrete Mathematics

2010–2014 **Sree Nidhi Institute of Science and Technology, Hyderabad**
B.Tech in Electronics and Communication Engineering , *CGPA* – ***8.4/10***.
- **Relevant courses:** Microprocessors, Digital Electronics and Logic Design, Analog and Digital communication systems, Digital Signal Processing

Industrial Projects

2017-2018 **Deep Neural Network for Malware classification(At FireEye Cyber Security)**
- Developed a Deep Neural Net Based static Malware Classifier for the Advanced Threat Defense Research Team
- Model has less FP rate and currently in production.

2017-2018 **Phishing Detection and classification using DNN (At FireEye Cyber Security)**
- Developed a CNN model that classifies the given URL as clean or one of the phishing brands
- Leveraged on transfer learning for faster training. Model currently in production

2016-2017 **Domain Oriented Conversational Agent(At Philips Lighting Pvt Ltd) (M.Tech Thesis) [Thesis Report]**
- Built a Seq2Seq model that can map questions to answers
- Used LSTM based Encoder-Decoder model
- Experimentally verified the performance of different Seq2Seq models on standard datasets

2014-2015 **2DFFT implementation on images (At Auviz Systems India Pvt Ltd)**
- FFT is the fast implementation of DFT and works well when the number of samples arein the powers of two
- Came up with an algorithm for applying 2DFFT on image instead of applying 1D-FFT on rows of the image and then on the columns of the image successively

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Independent Course work

2018 **Deep Reinforcement Learning(UC Berkley Fall 2017) [code]**
- Contributed to a Github repository for the study and analysis of some Deep RL techniques.
- Worked on simulated environments like OpenAI gym, Opensim
- Participated in *NIPS 2018: AI for prosthetics* challenge

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2015 **Machine Learning(Andrew Ng's course, Coursera) [code]**
- Contributed to a GitHub repository with basic ML algorithms implemented in MatLab
- Gained a verified certificate from Stanford University [certificate]

2015 Gained a verified certificate for successfully completing **Programming for everybody** by University Of Michigan offered through Coursera **[certificate]**

2015 Gained a verified certificate for successfully completing **Python Data Structures** by University Of Michigan offered through Coursera **[certificate]**

Academic Projects

2016 **Image Compression using 2DPCA**
- 2DPCA works on images directly without transforming images into 1-Dimensional vectors. Algorithm is implemented using python and openCV, and the results are verified on face dataset and performance is compared to the conventional PCA. It is observed that using 2DPCA, efficiency and performance are improved compared to conventional PCA

2016 **Tic-Tac-Toe implementation using Q-learning**
- Q-learning is a RL technique to learn the optimal (state, action) pair values for a given problem. optimal (s, a) pair value represents the value of taking action **a** when in state **s**. These values are learnt by the algorithm by using the episodes generated by self-play. (s, a) pair values are updated at each step of every episode using the rewards obtained at each step. Finally the action with the highest action value at the current state is selected as our move which is the best action in that state

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Talks

March 2016 Seminar talk on **"Singular Value Decomposition(SVD)"** at IIST

Technical Skills

Programming Languages	C, C++, Matlab, Octave, python
Operating Systems	GNU/Linux(CentOS, Ubuntu), Ms Windows XP/7
Software Packages	LaTeX, OpenCV, TensorFlow, OpenAI Gym

References

Available upon request