# Vamshi Kumar Kurva

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## Info

Website `https://vamshikumarkurva.github.io/`

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

Stack overflow `https://math.stackexchange.com/users/688895/vamshi-kumar-kurva`

## Education

2015–2017 **Indian Institute of Space Science and Technology, Kerala**
M.Tech in Machine Learning and Computing, *CGPA* – ***9.1/10 (Rank1 in class)***
- **Relevant courses:** Linear Algebra, Probability and Statistics, Optimization Techniques, Graph Theory, Machine Learning, Reinforcement Learning, Neural Networks

2010–2014 **Sree Nidhi Institute of Science and Technology, Hyderabad**
B.Tech in Electronics and Communication Engineering , *Score* – ***84%***
- **Relevant courses:** Data Structures, Digital Signal Processing, MicroProcessors

2008-2010 **Sri Chaitanya Junior College, Hyderabad**
Higher Secondary Education, *Score* – ***96.5%***
- **Major:** MPC (Maths, Physics, Chemistry)

2002-2008 **A.P.Residential High School, Keesaragutta, Hyderabad**
Secondary Education, *Score* – ***93.8%***
- **Major:** General studies

## Industrial Projects

2019-2020 **Bulk Email clustering and classification(At FireEye Cyber Security)**
- Developed a clustering mechanism to group similar emails together using ML and graph based techniques.
- Also developed a simple classifier to map an email into existing clusters.

2018-2019 **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 are in 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

## 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.

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**]

## Publications

2019 **2D FFT without using 1D FFT [paper]**

- Published at *International Journal of Innovative Science and Research Technology*

2018 **Epidemic outbreak prediction using Artificial Intelligence [paper]**

- Published at *International Journal of Computer Science Information Technology*

## 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.

## Talks

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

## Technical Skills

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