Vamshi Teja

+91-9515235789 www.linkedin.com/in/vamshi-teja/ ee15btech11023@iith.ac.in

Education

- **Indian Institute of Technology, Hyderabad** — Hyderabad, India
  Bachelor of Technology in Electrical and Computer Science Engineering; ***GPA: 9.08/10*** — *Aug. 2015 – Present*
- **Narayana Junior College** — Hyderabad, India
  Senior Secondary School, Telangana Board; Score: 98.5% — *June. 2013 – May. 2015*
- **Keshava Reddy Concept School** — Hyderabad, India
  Secondary School, Telangana Board; GPA: 9.7/10 — *June. 2012 – May. 2013*

Professional Experience

- **RCAST, University of Tokyo** — Tokyo, Japan
  Research Internship — *July. 2018*
  - Worked on analysing evaluation of Language Models(LMs) using Neural Language Models.
  - Used state-of-the art Neural LMs to evaluate LMs spanning all performance levels.
  - Arrived at conclusions to effectively use this criterion. Project presentation can be found *here.*
- **Philips Innovation Campus** — Bangalore, India
  Summer Internship — *May. 2018 - June. 2018*
  - Worked on unsupervised classification using Generative Adversarial Networks on Medical Images.
  - Able to extract linealy seperable features on a Limited Breast Cancer(Mammography) Dataset.
  - Traditional Clustering on these features performed on par with supervised approaches.
- **Mobiliya** — Bangalore, India
  Summer Internship — *June. 2017-July. 2017*
  - Worked on Facial Emotion Recognition from videos using CNNs & RNNs.
  - Implemented Hierarchical Attention Networks on IMDB Review Dataset for scoring reviews.
  - Also worked on synthesis of Images from text descriptions(Text-to-Img) using GANs.
- **GE Appliances** — Hyderabad, India
  UT Austin & IITH - Industrial Project — *June. 2016 - July. 2016*
  - As a part of Advanced Embedded Systems course we did our Industrial project with GE Appliances. We had to build a prototype to make GE Appliances smart by connecting them over the Internet.
  - We worked with HTTP and MQTT protocols using raspberry pi(connects all local devices) as a local server.

Academic Projects

- **SubModular Optimization for Minibatch Selection in Neural Networks(Ongoing)**: To select a mini batch for stochastic gradient descent which represents the dataset using submodular functions.
- **Disentanglement using Factor VAE for Better Taskonomy(Ongoing)**: Goal is to solve a set of visual tasks without explicitly training all of them. Came up with a novel way to perform task-transfer reducing computational complexity as compared to Taskonomy-Original Approach.
- **Deep Recurrent Gaussian Processess for Sequence Labelling(Ongoing)**: To develop Deep Recurrent Gaussian Processess for Sequence Labelling which reduces the uncertainity in predictions compared to traditional RNNs. Derived Lower Bound for Inference. Working on implementing this algorithm for POS Tagging.
- **Classification and Quantification of SRF/PED from OCT Scans(To be Submitted to Journal)**: Goal is to detect and quantify retinal-fluid based disorders to assist ophthalmologists. Devoloped two step approach, detection of fluid followed by segmentation. Used Ensemble Methods for clasification and deep learning methods for segmentation. Acheived dice score of 0.92 and could detect even small fluid regions. Project report can be found *here.*

- **Land Cover Segmentation from High Resolution Satellite Images**: Studied performance of state-of-the art semantic-segmentaion models on patches of Satellite Images(due to computational constraints). Achieved best performance with DeepLab-v3 architecture. Achieved a dice score of 0.68 which is one of the top scores in the competetion. Project presentation can be found *here.*
- **Recommendation Systems using deep learning**: Built music recommendation engine where user histories are modelled as sessions containing (begin time,end time,activities) tuples. Used techniques from survival analysis and LSTM networks. Improved Mean Absolute Error by 8%.
- **Finding the Right Social Media for Questions**: Given a query, the goal is to redirect to the right social media site which can answer the query. We followed a three step approach which involves modelling of query, site followed by ranking. Project presentation can be found *here.*
- **Face Emotion Recognition**: Explored several filter based and ML approaches. Achieved best results using CNNs. Fine-tuning pre-trained networks trained on Imagenet with FER2013 dataset also gave decent results. We achieved accuracy of about 55%. Project Presentation can be found *here.*
- **Theft Detection**: Developed application that alerts if any motion is detected in a room and sends picture to dropbox. Used background subtraction algorithm and significantly increased fps by exploting multithreading for capturing and processing of images. Able to stream live video to local host.

Technical Skills

- **Languages**: Python, C++, C, PostgreSQL, Assembly, LaTeX
- **Softwares and Packages**: Tensorflow, PyTorch, Keras, OpenCV, GPy, Matlab, Caffe, Modelsim, Arduino, Raspberry Pi, TM4C Launchpad, Microsoft Office
- **Operating Systems**:Ubuntu, Windows, Mac OSx

Course Work

- Optimization Methods in Machine Learning*, Deep Learning, Applied Machine Learning, Data Mining, Information Theory and Coding, Data Analytcs, Practical Challenges in Image Analysis, DBMS, Algorithms, Data Structures, Advanced Embedded Systems, Linear Algebra

Achievements

- Selected for Sakura Science Program organised by Japaneese Government.
- Secured 32nd rank in McKinsey Analytics Hackathon out of around 3k participants.
- Secured AIR 3925 in IIT-JEE 2015, AIR 1541 in JEE-MAINS 2015 and State Rank 521 in TS-EAMCET 2015.
- Received **RAJYAPURASKAR** Scout Award in 2010.

Positions of Responsibility

- Teaching Assistant for Matrix Analysis, Electric Circuits, Magnetic Circuits, Device Physics.
- Sushine Mentor in sophomore year for freshmen students.
- Core-member of Lamba club(Development club of IITH).