Pathapati Aravind Ganesh

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28th March, 1999
AravindGanesh
AravindGaneshP
resume link

Education

2016 - present B.Tech + Honors in Electrical Engineering
Indian Institute of Technology Hyderabad
CGPA: 8.3

2014 - 2016 XI and XII, AP State Board
Narayana Jr. College, Nellore
Percentage: 97.4%
JEE Advanced AIR: 1453

2013 - 2014 SSC, AP State Board
Ratnam High School, Nellore
GPA: 9.7

Areas of Interest

I am passionate about AI and have been working with deep learning since my 2nd year of B.Tech. I am primarily interested in the fields of Generative Adversarial Networks and Reinforcement Learning. I want to work on various deep learning applications and research problems on image and video data. I like exploring new research in AI, and I love writing code in python and TensorFlow.

Work Experience

- **2019 - Summer Internship**: Philips Innovation Campus, Bangalore
  Medical image data augmentation using Generative Adversarial Networks.

Projects

- **Deep Reinforcement Learning for Communication systems** - Ongoing academic project under the guidance Dr. Saidhiraj Amuru, EE faculty, IIT Hyderabad.
  Our team aims to come up with an end-to-end model for the MIMO system using reinforcement learning techniques in the scenarios of noisy feedback and delayed feedback. Our model does not assume a known channel model or perfect feedback. Reference paper: *arxiv link*

- **Video Generation using Conditional GANs** - Ongoing academic project under the guidance of Dr. Sumohana S. Channappayya, EE faculty, IIT Hyderabad.
  We intend to build a conditional GAN for video generation using optical flow labels. Our approaches include, modeling temporal statistics of optical flow, quality assessment between real and fake optical flows, modeling of texture and semantics, etc.

- **Face and Gait Recognition - Summer Project, 2018**: under the guidance of Dr.Sumohana, EE faculty, IIT Hyderabad

    * Face Detection and Recognition on a security camera footage using openCV, DLib and FaceNet on videos(720p, 24fps) - acheived a 98% accuracy on a small test dataset.
    * Gait Recognition using HumanposeNN and GaitNN models - 92% accuracy on small custom test dataset
    * GitHub repo: *AravindGanesh/Face-Gait_recognition*
- **Lung Tumor Segmentation - IEEE VIP-CUP 2018**: Member in the team representing IIT Hyderabad in IEEE VIP-CUP, 2018 problem statement on segmentation of lung tumors on DICOM images. Secured 6th position in the same.
- **ChronoLSTM**: Academic project as a part of a course on Sequence Modeling
  Analysis and implementation of the paper *CAN RECURRENT NEURAL NETWORKS WARP TIME?*
- **VAD**: IV semester project under the Guidance of Dr. Sri Rama Murty Kodukula
  Far Field Voice Activity Detection using RNN and Raspberry-Pi
- **Inter-IIT tech-meet 2017**: Problem statement - Technology support for Soldiers

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Technical Experience

- **Machine Learning and Deep Learning**

  • Generative Adversarial Networks • Reinforcement Learning • CNN • Neural Networks • Autoencoders • Regression • Support Vector Machines • Representation Learning (PCA, K-Means, GMM, etc.) • Kernel Methods • Basics of RNN and LSTM

- **ML Frameworks**
    - tensorflow - 1.14, 2.0 and keras (intermediate level expertise)
    - scikit-learn (intermediate level)
    - pytorch (beginner level)
- **Significant courses relevant to my areas of interest, in my B.Tech curriculum**

  • Introduction to AI and ML • Representation Learning • Deep Learning • Deep Learning for Vision • Sequence Modeling • Kernel Methods • Convex Optimization • Sub-modular Functions • ML Applications in Wireless Communications • Probability and Random Processes • Digital Signal Processing • Digital Communications • Data Structures and Algorithms • Multiple Antenna Systems

- **Programming Languages**
    - python3.x - numpy, scipy, cvxopt, os, matplotlib, PIL, scikit-image, opencv, pandas
    - C, C++, Fortran and MATLAB with a basic level expertise
- **Miscellaneous**

  • Linux-Ubuntu (preferred OS) • git, GitHub • Google Sheets • LaTeX

Extra Curriculars

- Core member of Elektronica club, Sci-tech Council, IIT Hyderabad
- Participant in Inter-IIT Tech-meet, 2017 and 2018
- Coordinator of Workshops and Hackathon, ELAN & nvision - 2018
- Active volunteer for NSS, IIT Hyderabad
- I spend my free time watching Marvel movies and F.R.I.E.N.D.S