

Dheeraj Racha

+91-7893212949



ee17btech11033@iith.ac.in

EDUCATION

- **Indian Institute of Technology Hyderabad** Hyderabad, India
Bachelor of Technology in Electrical and Computer Science Engineering; GPA: 8.67/10 Aug. 2017 – Present
- **FIITJEE Junior College** Hyderabad, India
Senior Secondary School, Telangana Board; 97.1% June. 2015 – May. 2016
- **Jawahar Navodaya Vidhyalaya** Medak, India
Secondary School, CBSE Board; GPA: 10/10 June. 2013 – May. 2014

PROFESSIONAL EXPERIENCE

- **Hexagon Capability Centre India** Hyderabad, India
Summer Internship May. 2020 – July. 2020
 - Developed an efficient data loader to parse pdf documents maintaining its semantic structure.
 - Used neural networks for document classification (achieved a precision of 0.99) and autoencoders to recommend similar documents.

ACADEMIC PROJECTS

- **Reinforcement Learning** [Project Code](#)
Reinforcement Learning course project March. 2020 – April. 2020
 - Used Q-learning, SARSA, DQN and Policy Gradients for training agents to play PacMan, Pong, etc in OpenAiGym environments.
- **On Deep Learning based Channel Decoding** [Project Code](#)
Under Dr. Sai Dheeraj Amuru, Dept of EE, IITH. March. 2020 – April 2020
 - Used classical neural networks with custom layers (for BPSK modulation and AWGN channel) to decode polar codes, a linear block error-correcting code.
- **Event Detection in Social Streams** [Project Code](#)
Data Mining Course project September 2019 – November. 2019
 - Developed a real-time system for discovering events (modelled as a list of clusters of trending entities over time) that is novel in scale and speed.
 - Considered both the content and structure of the interactions between entities for event detection. And used a sketch based technique to maintain node statistics in a space-efficient way. Achieved an average cluster purity of 0.32.
- **Image Matching** [Project Code](#)
Under Dr. Sumohana Channappayya, Dept of EE, IITH. February. 2019 – August. 2019
 - Worked on DeepMatching and SimNets for finding the confidence of similarity between images.
 - Studied the performance of state-of-the-art semantic segmentation models on aerial image dataset. Achieved a mean IoU of 78.2% and mean accuracy of 93.4% with DeepLab-v3 architecture.

TECHNICAL SKILLS

- **Languages:** Python, C++, C, L^AT_EX
- **Softwares and Packages:** Tensorflow, Keras, OpenCV, Plotly, Matlab, PyMuPDF, Raspberry Pi
- **Code Versioning:** Git
- **Virtualization Software:** Docker
- **Operating Systems:** Ubuntu, Windows

COURSE WORK

Reinforcement Learning	Deep Learning
Mathematics behind Machine Learning	Machine Learning Applications for Wireless Communications
Data Mining	Data Structures
Algorithms	DBMS
Data Analytics	Internet of Things

ACHIEVEMENTS

- Secured AIR 3850 in IIT-JEE 2017
- Secured AIR 4227 in JEE-MAINS 2017
- Secured a state rank 421 in TS-EAMCET 2017

POSITIONS OF RESPONSIBILITY

- Teaching Assistant for Differential Equations.
- Active NSS Volunteer.