Dheeraj Racha

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EDUCATION

Indian Institute of Technology Hyderabad   Hyderabad, India
Bachelor of Technology in Electrical and Computer Science Engineering; GPA: 8.69/10   *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 Center India   Hyderabad, India
Summer Internship, Manager: Somanchi Chandrasekharam   *May. 2020 – July. 2020*

- Developed an efficient data loader to parse pdf documents maintaining its semantic structure.
- Trained Neural Networks using TensorFlow to classifiy product-related documents. Used AutoEncoders to match similar documents.

ACADEMIC PROJECTS

Surveillance Camera Obstruction Detection
Under Dr. Sumohana Channappayya, Dept of EE, IITH.   *Oct. 2020 – Present*

- To detect any unauthorized alteration of viewpoint of surveillance camera.

Solving Games with Reinforcement Learning   [Project Code]
Reinforcement Learning course project   *March. 2020 – April. 2020*

- Implemented RL Algorithms such as Q-learning, SARSA, DQN and Policy Gradients for training agents to play PacMan, Pong, MountainCar, LunarLander in OpenAi Gym environments.

Deep Learning based Channel Decoding   [Project Code]
ML Applications for Wireless Communications course project   *March. 2020 – April 2020*

- Trained Neural Networks to decode Polar Codes. Achieved close to MAP performance.

Event Detection in Social Streams   [Project Code]
Data Mining Course project   *September 2019 – November. 2019*

- Developed a real-time system that is novel in scale and speed for discovering events.
- Considered both the content and structure of the interactions between entities. Used a sketch based technique to efficiently maintain the node statistics. Achieved an average cluster purity of 0.32.

Image Matching   [Project Code]
Under Dr. Sumohana Channappayya, Dept of EE, IITH.   *February. 2019 – August. 2019*

- Studied the performance of DeepMatching and Simnets to estimate a visual similarity score between images. Trained DeepLab-V3 on aerial image dataset. Achieved a mean IoU of 78.2% and a mean accuracy of 93.4%.

TECHNICAL SKILLS

- **Languages**: Python, C++, C, LaTeX
- **Softwares and Packages**: Tensorflow, Keras, PyTorch, Scikit-learn, OpenCV, Plotly, OpenAI Gym, Matlab
- **Version Control**: Git

Course Work

Data Structures	Algorithms
Reinforcement Learning	Deep Learning
Image Processing	Representation Learning
Data Mining	DBMS
Machine Learning for Signal Processing	Machine Learning Applications for Wireless Communications

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.