Anwesan De

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PROFILE

I am Electronics and Instrumentation Undergraduate at Bits Pilani, currently in my second year. My interest lies in Machine learning focusing on Reinforcement learning and it's application in Robotics , healthcare ,Autonomous Vehicle motion , lane changing operation , traffic navigation . Information technology and Data Science is deeply appealing to me as well.

EDUCATION

Birla Institute of Technology and Science , Pilani

Hyderabad Campus

Bachelor Of Engineering(Hons.), Electronics and Instrumentation

Minor, Robotics and Automation

Graduation year:2023

CGPA: 8. 24

SKILL-SET

- Python -[libraries: collection, NumPY, Pandas, Scikit-learn,Matplotlib, Seaborn, Keras, tkinter, OpenCV]
- MATLAB
- TensorFlow
- C
- AUTOCAD
- Xilinx
- LTSpice

PROJECTS

- **Using Reinforcement Learning to train AI to play Google Chrome Dinosaurs Game**:

a) The Screenshot of the game environment was taken and the pixel value was optimized using OpenCV library in Python.

b) A Deep Q Network algorithm was used to train the agent

c) A Convolutional Neural Network was used to analyze the pixel data

d) A Custom Gym environment was created to access the game on Google chrome and manipulate it.

- **Experience with Standard Gym Environments and Reinforcement Learning:** Using standard Gym environments I have used various algorithms like Q table and Deep Q Network to teach the agent in solving the environments. Some Examples include:

a) Highway-env – The main task in this environment is for the agent is to navigate a car in traffic by slowing down, increasing speed or changing lanes

b) MountainCar-v0 and MountainCarContinuous-v0– The task was to carry the vehicle up a mountain in an under-powered car. The Agent had to learn to move the car back and forth to develop momentum.

c) CartPole-v0 – The agent had to learn to make minute changes in position in the cart which in turn balances a rod and keeps it upright.

- **Minute Python projects:**To exercise my knowledge and my desire to learn I implemented the following python scripts in my day-to-day functioning:

a) A PDF to excel/LaTeX/csv format converter

b) Solving ordinary point series, regular singular series and hypergeometric series .

c) A web-scraper application which scrapes the pdf slides and documents from the professor's website . This was achieved using python library beautifulsoup4 and requests

d) A calculator and a basic text editor using the python tkinter library

- **Informal Project**:Incoming informal project under Faculty on lane-changing autonomous vehicles using reinforcement learning .

INTERNSHIP

- **Military College of Electronics and Mechanical Engineering, Secunderabad (MCEME) :** Soldier health monitoring using Artificial Intelligence and location tracking system using Wireless Sensor Networks(WSN)

  [May '21 – July '21]

COURSES TAKEN

- Introduction to Tensorflow for Artificial Intelligence , Machine Learning , and Deep Learning offered by DeepLearning.AI under Coursera.
- Machine Learning Course offered By Andrew Ng by Stanford|online under Coursera
- Statistics with Python Specialization offered by Michigan University under Coursera
- LaTeX101x: Latex for students , Engineers , and Scientists offered by IIT Bombay under edX

EXTRA CURRICULAR ACTIVITIES

- **Rotaract Club, Bits Pilani**: Served as the Secretary of the Rotaract Club of Bits Pilani
- **Phoenix**: As a part of Phoenix , the association for Electrical and Electronics Students , I contributed to its annual magazine and wrote the cover story . I was part of the organizing body for our Technical fest, ATMOS.
- **CRUx** :I am a part of CRUx the programming and computing club of our campus .

PUBLICATIONS

- "**A Hitchhiker's Guide to Sentiment Analysis using Naive-Bayes Classifier**" An article on Naive-Bayes classification , Towards Data Science, 2021
- **"the-intuition-behind-Reinforcement-learning"** An introduction to Reinforcement Learning , Towards Data Science, 2021

ACHIEVEMENTS

- In Univ.ai Hackathon I got an All India Rank of 360 and came 3rd in my campus
- I was selected to be a part of the Amazon ML Summer School India .