Somaiya Vidyavihar

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(An Autonomous Un-aided Institute - Affiliated to University of Mumbai & Approved by AICTE)

AI/ML

1. Recruitment Assisting platform which will help recruiters filter out resumes for a particular job profile. (100 points)

- Apply ML to segregate the resumes into different classes or groups. These classes or groups must be utilised to enhance the Resume based Search Engine. (Task 1) *(25 points)*
- Create a recommender system which will prompt the recruiter with skills related to the filters provided to enhance the search. (Task 2) *(25 points)*
- Create an automated Scraper to fetch profiles from public recruitment based platforms (Task 3) *(25 points)*
- Association based mining to be used. The recruiter just needs to provide the post or position in the organisation and the tool should provide the recommended candidates (Task 4) *(25 points)*

2. Develop a bot that can simulate the downtime of a particular machine along with different tool steps. (100 points)

For *example* observe the below cycle time of the machine :

machineID : ["startDateTime" : "12:30:00 1/02/2019", "endDateTime":"12:40:00 01/02/2019", steps : ["toolA": ["startDateTime" : "12:30:00 1/02/2019", "endDateTime":"12:34:00 01/02/2019"], "toolB": ["startDateTime" : "12:34:00 1/02/2019", "endDateTime":"12:38:00 01/02/2019"], "toolC": ["startDateTime" : "12:38:00 1/02/2019", "endDateTime":"12:40:00 01/02/2019"]]]

The above depicts the cycle time of 10 minutes where in 3 tools are used within the cycle time. The bot must push cycle time of the machine in real-time basis on to an application defined.

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- The application must accept the above cycle time and should be able to calculate the idle time of the machine on real time basis. (Task 1) *(50 points)*
- Write a neural network which feeds on the cycle time defined by the bot and suggests corrections in the tool time utilisation based on the data defined. (Task 2) *(50 points)*

IOT

Data Relay – MQTT Protocol must be used. (100 points)

- An application system which can accept data from multiple sources at a frequency of 500ms and can segregate the data as per the data type into different containers of the database. (Task 1) *(25 points)*
- At a frequency of 5 minutes the entire dataset must be compressed and relayed onto a cloud infrastructure without any data loss if internet connection is active. If there is no internet connection or slow internet connection, the same should be retained into the existing database. (Task 2) *(25 points)*
- The cloud infrastructure must accept the compressed dataset and should be able to successfully process the same. (Task 3) *(25 points)*
- Create 50 bots using multithreading that would push different data streams at a frequency of 500ms on the above developed system. The bots must be live and pushing data for at least 6 hours. *(25 points)*

Note : Data must be compressed down by at least 80% less than the actual size.

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Blockchain

1. Eliminate the middleman between farmers and customers by building a platform for farmers to sell their crops. Use Blockchain smart contracts for secure and centralized network based communication between farmers and customers. (60 points)

- Make a gateway for farmers and customers to process the contract. (Task 1) (*20 points*)
- A status tracking page for each contact should be provided. (Task 2) (*20 points*)
- A dashboard must be provided to the farmers which provides the Demand and sales information. (Task 3) (*20 points*)

2. Build a decentralized platform for music producers to share and license their work and their work could be bought using cryptocurrency. (40 points)

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AR/VR

AR/VR is on the rise nowadays! Make an app to simulate adventure sports such as skydiving, scuba diving, etc. The user should be able to use it from anywhere and select any environment. (100 points)

- A detailed environment must be created with a maintained fps.(Task 1) *(30 points)*
- Add external controls for navigation inside the simulation.(Task 2) *(30 points)*
- Add multiplayer support so that players can compete with each other. (Task 3) *(40 points)*

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Fintech

1. Stock Trading manager (60 points)

- Build an app which would help beginners get into Stock trading. Solution must include features such as interactive guide. (Task 1) *(20 points)*
- Build a gamified version of stock market with a sandbox environment (Task 2). *(20 points)*
- The game should suggest contextual tips based on user performance (Task 3). *(20 points)*

2. Startup Finder for Investors (50 points)

- Create a social media and repository bot which indexes the potential startup ideas in a database. (Task 1) *(15 points)*
- A news feed scraper must be used to trace the activities of the projects. (Task 2) *(15 points)*
- A CRM Style dashboard for the projects added to watch list. (Task 3) *(20 points)*

Compute the efficiency of a machine based on tools