UDACITY

Return to "Machine Learning Engineer Nanodegree" in the classroom

DISCUSS ON STUDENT HUB

Capstone Proposal

REVIEW

HISTORY

Meets Specifications

Very impressive work on proposal!! Its no less than any research paper. You have chosen very challenging benchmark research. Awesome work on all sections of proposal. It was fun and interesting read. Its no easy choice. You have good domain expertise on trading and ML technique. Usually I have seen time series based prediction on stock training but very few times I get to review RL approach for such problem domain. Very exciting. Excellent work citing the references in Bibliography section. It reflects the amount of hard work that went behind to finish this proposal.

Wish you all the best for final capstone machine learning project!!

Project Proposal

Student briefly details background information of the domain from which the project is proposed. Historical information relevant to the project should be included. It should be clear how or why a problem in the domain can or should be solved. Related academic research should be appropriately cited. A discussion of the student's personal motivation for investigating a particular problem in the domain is encouraged but not required.

Excellent work on problem background!! Good insight on how digitization has made impact to market trading. Well done mentioning the personal motivation and citing related area of research.

Student clearly describes the problem that is to be solved. The problem is well defined and has at least one relevant potential solution. Additionally, the problem is quantifiable, measurable, and replicable.

Good work on problem statement. From statement it is clear that it can be approached with RL agent. Would recommend to mention goal or optimization strategy of RL agent like maximizing the profit through ROI (Return of Investment)

The dataset(s) and/or input(s) to be used in the project are thoroughly described. Information such as how the dataset or input is (was) obtained, and the characteristics of the dataset or input, should be included. It should be clear how the dataset(s) or input(s) will be used in the project and whether their use is appropriate given the context of the problem.

Excellent work in this section. Well done citing different sources from where data can be obtained. Good mention of Technical indicator and including these indicators into Environment space. It is clear that Action space is discrete (Buy, Sell and Hold) and Environment returns reward with next state.

Great work calculating the amount of data involved in each instrument close to 7.2M rows.

Student clearly describes a solution to the problem. The solution is applicable to the project domain and appropriate for the dataset(s) or input(s) given. Additionally, the solution is quantifiable, measurable, and replicable.

Excellent work on solution statement!! Good reasoning on various approaches and mentioning some of the complexities on State and Action space. Well done choosing DDPG algo. It will be interesting to see how this algo performs. Other approach like Deep Q learning have also known to perform good on such problem set.

A benchmark model is provided that relates to the domain, problem statement, and intended solution. Ideally, the student's benchmark model provides context for existing methods or known information in the domain and problem given, which can then be objectively compared to the student's solution. The benchmark model is clearly defined and measurable.

Excellent work on selecting existing area of research as model benchmark. Good insight mentioning shortfalls of this research. Based on these reasoning I can say you have good domain expertise on stocking trading and machine learning techniques. Having expertise on both areas can set ground breaking research work.

Student proposes at least one evaluation metric that can be used to quantify the performance of both the benchmark model and the solution model presented. The evaluation metric(s) proposed are appropriate given the context of the data, the problem statement, and the intended solution.

Excellent work mentioning the couple of evaluation metric you plan to consider. Good point on supplementing with more metric to adjust the agent behavior to improve performance.

Student summarizes a theoretical workflow for approaching a solution given the problem. Discussion is made as to what strategies may be employed, what analysis of the data might be required, or which algorithms will be considered. The workflow and discussion provided align with the qualities of the project. Small visualizations, pseudocode, or diagrams are encouraged but not required.

Excellent work in Data acquisition, preprocessing, DDPG architecture, Training approach, Hyperparameter tuning and Process of refinement.
You have briefly mentioned all necessary phases of machine learning project. Good point on applying PCA to each technical indicator.
Would recommend to mention some details on reward function, depict some mathematical equation on how it will be evaluated. It may not be final reward function but just the initial approach here.

Proposal follows a well-organized structure and would be readily understood by its intended audience. Each section is written in a clear, concise and specific manner. Few grammatical and spelling mistakes are present. All resources used and referenced are properly cited.

Well organised and readable proposal!! Very impressive... No less then research proposal.

DOWNLOAD PROJECT

RETURN TO PATH