

School of Computing

Year 4 Project Proposal Form

SECTION A

Project Title: Smart Predict (Trading Platform)

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Stream: CASE

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SECTION B

Proposal Description

- General area covered by the project

Smart Predict aims to help it's users make intelligent decisions on buying and selling of stocks (regular & cryptocurrency markets). This is achieved through Machine Learning. This is the bulk of the functionality of the app. This WebApp covers a broad spectrum of areas, including the financial industry and complex technologies such as Artificial Intelligence.

The App will provide the User with predictions for the market based on knowledge it has learned from past data. Recommending that the user should buy, sell or hold their stocks. Training this algorithm so that it has a high accuracy will be the main challenge of the project considering that the margin for error is quite large and the cost of making an incorrect prediction is high.

- Outline of the proposed project

- **Background** - I've always had a keen interest in finance as a whole, but when the time came to choose a discipline to study in college I decided that computing would be a better fit for me. When the idea of Bitcoin and other Cryptocurrencies came along it naturally caught my eye, being the product of my two main interests.
- **Achievements** - Smart Predict provides users with an all-in-one solution to their trading needs. It aims to make this over-complicated industry intuitive, providing key details and graphics that will help the user make decisions on which stock to invest in and why. The users themselves can range from college students interested in the industry and making small amounts of profit to serious fulltime traders with much more capital invested.

- **Justification** - As mentioned above this app will allow users to easily make trades regardless of their knowledge/experience of trading. By doing this I hope to alleviate the steep learning curve and daunting first look of trading as it's known as today. Smart Predict will also be a major benefit to the every-day trader who perhaps doesn't have the technology/spending power of a huge corporation. My aim is to make the app a useful weapon to every trader's arsenal.
- **Programming language(s) -**
 - Python
 - JavaScript & XML
 - HTML & CSS
- **Programming tools / Tech stack –**
 - NumPy
 - Matplotlib
 - Amazon Web Services
 - Pandas
 - Eclipse/script.google/other
- **Learning Challenges** - Training an algorithm to accurately predict the price of stocks is something completely new to me. I did a course that involved some aspects of AI last year but I have never written code that implements any kind of machine learning before. I have a small amount of experience of coding in JavaScript from my third year project and also my internship in SAP but I wouldn't class myself as an expert by any means. I haven't used any of the python libraries I plan on using and I don't have any experience in financial graph plotting. I'm not familiar at all with Script.google, if I decide to use it as opposed to other Development Tools. There is a lot of learning involved with this project, which is something that I'm looking forward to.
- **Hardware / software platform** - I will be using Windows 7 for the majority of this project with other pieces of code written locally on my laptop which runs macOS.
- **Special hardware / software requirements** - Not Applicable.