**Literature Review for my project**

**Program interface and functionality:**

Python – Spyder

Jira – agile methodology software

GitLab – dynamically upload work for a project

Streamlit - open-source framework for machine learning apps

Easy to use UI for the user - (with dropdown menus and a functionality to extend or zoom the graph for better understanding of the strategy moves).

Stock Graphs – the display of correct data points to form a graph of a stock using the yahoo finance database.

Dropdown menus – the menus will have the use to choose a stock and a trading strategy to display in the graph.

General data box display – next to the graph there will be a context of stock data displayed to get a clearer understanding of the different

Slide bar of graph – the feature will enable the user to zoom in the graph to display a more

Result meter - the display of the success of a strategy is an important metric for the user and it will be displayed in %, therefore the user will have the % of success for all the trades that happened as well as a capital calculator for a specific budget of the user’s choice.

StockTwits page – the page will display latest stocktwits about a chosen stock. This feature makes the program even more useful for day-to-day traders/users who want a full package of an efficient stock trading portfolio application.

**Research Articles**

* Simple moving average or adaptive? Which one is better?

This study examines the comparative performance of an Adaptive Moving Average (AMA) on the Australian All Ordinaries, Dow Jones Industrial Average, and Standard and Poor’s 500 stock market indices. The theoretical advantage of the Adaptive Moving Average over fixed length Simple Moving Average (SMA) trading systems is its ability to automatically respond to changing market conditions dependent upon the level of volatility in the market. While the strategy is confirmed to have some market timing ability, the overall results show returns to the Adaptive Moving Average cannot compensate for the cost of trade therefore lending support for the use of a long run passive strategy.

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<https://reader.elsevier.com/reader/sd/pii/S0275531905000310?token=BA4D615A2045515D96EF6E81103136968E5D1167FD4B03B284B1228E979900E7D9E98D061A0F0A3D79A77D21206DCFAC&originRegion=eu-west-1&originCreation=20210910160354>

* Technical analysis for the ft30 testing MACD and RSI

The examination of this article focuses on the two oscillators, the Moving Average Convergence–Divergence (MACD) and the Relative Strength Index (RSI) inspecting whether the strategies are profitable on the ft30 index. The result of the examination by using the almost 60-year-old datasets to test the oscillators was positive, meaning that the RSI and MACD can generate returns better than the usual buy-and-hold strategy that is used with most pension funds.

Terence Tai-Leung Chong & Wing-Kam Ng

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Published online: 6 Nov 2008

<https://www.tandfonline.com/doi/full/10.1080/13504850600993598?scroll=top&needAccess=true>

* Design Recommendations for Intelligent Tutoring Systems

The paper is examining valid design system for the data visualization of a program. My implementation of the trading strategy visualization application will make use of the streamlit framework which allows users to create interactive web pages using Python very easily. Streamlit accesses SQL databases that enables the user to compose nice visualizations of interfaces and the interaction of data.

PERSONAL COMMENTS:

Streamlit is a very useful framework to create my web application because of its easy and efficient approach on adding database features and graphs. It also makes good use of widgets, like slide menus, dropdown menus and hamburger menus which are definitely going to be vital for my program.

Darian J. DeFalco and Jeanine A. DeFalco

U.S. Army Combat Capabilities Development Command (DEVCOM) – Soldier Center – Simulation and Training Technology Center (STTC)

<https://www.gifttutoring.org/attachments/download/3874/DesignRecommendationsforITSs_Volume8_DataVisualizationBook_Final.pdf#page=51>

* Make Portfolios Smart Again

The detailed report is a document written by a group of students who created a new way of stock market portfolios. In that report they state the need of new types of portfolios and features in them, as well as their approach to solve that issue. In their approach one of the meaningful contributions to the general stock portfolio is the asset allocation, meaning the optimal budget needed based on the Markowitz model that is used to calculate that.

PERSONAL COMMENTS:

The reason I chose this paper in my literature review is because the application described is in a way similar to the application I envision to create. There are some features that I have already in mind to implement that are similar to their approach, like the use of budget allocation for a trading strategy. The paper also talks about the use of yahoo finance and pandas libraries to help retrieve all of the needed financial data for the program.

Stock Portfolio Management System (SPMS)

<https://www.christophersheaffe.com/static/data/comp9900_report.pdf>

* Evolving and combining technical indicators to generate trading strategies

The uploaded paper describes the use of a number of useful indicators in the Thailand stock market. The reported indicators consist of the popular MACD, STO and RSI indicators, with the relevant mathematical formulas and general information. Finally, the paper consists of combinations of these indicators to find successful strategies to outperform the stock exchange of Thailand.

PERSONAL COMMENTS:

It would be useful to take into consideration when developing the app to make a combine indicator feature, where the end user will be able to combine oscillators for more successful results in the stock market.

Chawwalit Faijareon and Ohm Sornil, 2018

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<https://iopscience.iop.org/article/10.1088/1742-6596/1195/1/012010/pdf>