# Factor Investing and Analysis with Machine Learning

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## Project Description - include target audience, objective, methods

The main idea of this machine learning project is to develop and train various algorithms that fit stocks characteristics and the corresponding performance. We will mainly focus on performing technical analysis rather than fundamental analysis, which means that we will deep dive into economic and financial factors that drive the overall performance of a stock. Our target audience will be mainly for other groups of students who are interested in machine learning applications in the investment industry. However, other groups such as asset management firms and scholars are also included in our target audience. We will implement at least 2 sets of algorithms and evaluate the different performances of each algorithm.

## Sample Data

There are several data resources available that can be leveraged for this project:

- **Machine Learning Factor Dataset**[1]
  This data set comprises US stocks information that ranges from November 1998 to March 2019. Additionally, for each stock, this data set also includes 93 characteristics that cover topics ranging from valuation, momentum, volatility, and other attributes.

- **Nasdaq Dorsey Wright Equity Technical Analysis Data**[2]
  This data set originated from Nasdaq and can be obtained via the API. It contains over 50 technical analysis data points, covering more than 25.000 global equity stocks.

## References

[1] T. G. Guillaume Coqueret. *Machine Learning for Factor Investing: R Version*. Chapman Hall/CRC Financial Mathematics Series. Chapman and Hall/CRC, 1 edition, 2020.
[2] Nasdaq Dorsey Wright. *Equity Technical Analysis Data*, accessed 25 April 2022, <https://data.nasdaq.com/databases/NDWEQTA/data>.