UDACITY

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Multifactor Model

REVIEW

CODE REVIEW

HISTORY

Meets Specifications

Excellent work

Your code is excellent and you have clearly demonstrated your understanding of the project
I'm impressed and at the same time satisfied with the understanding and grasp of concepts demonstrated in this project
It was a pleasure reviewing your work, and we look forward to seeing future submissions from you.

keep up the good work and stay udacious

for further reading

- https://corporatefinanceinstitute.com/resources/knowledge/other/multi-factor-model/
- https://www.investopedia.com/terms/m/multifactor-model.asp

Statistical Risk Model

The function `fit_pca` fits the PCA model with returns.

Good job fitting the PCA model.

The function `factor_betas` gets the factor betas from the PCA model.

Excellent work calculating the factor betas!

The function `factor_returns` gets the factor returns from the PCA model.

Nice job calculating the factor returns

The function `factor_cov_matrix` gets the factor covariance matrix.

Good job calculating the factor covariance matrix!

The function `idiosyncratic_var_matrix` gets the idiosyncratic variance matrix.

Keep up the good work!

The function `idiosyncratic_var_vector` gets the idiosyncratic variance vector.

Excellent job calculating the idiosyncratic variance vector.

The function `predict_portfolio_risk` gets the predicted portfolio risk.

Nice! I like that you converted the variable names to match the formula.

Create Alpha Factors

The function `mean_reversion_5day_sector_neutral` generates the mean reversion 5 day sector neutral factor.

Simple and correct code!

The function `mean_reversion_5day_sector_neutral_smoothed` generates the mean reversion 5 day sector neutral smoothed factor.

Good job calculating the smoothed factor!

Evaluate Alpha Factors

The function `sharpe_ratio` gets the sharpe ratio for each factor for the entire period.

That's right! You'll notice that the smoothed factors have a lower sharpe ratio.

The student correctly mentions what would happened if you smooth the momentum factor and why.

That's perfect

Optimal Portfolio Constrained by Risk Model

The function `OptimalHoldings._get_obj` returns the correct objective function.

The function `OptimalHoldings._get_constraints` returns the correct list of constraints.

Nice job with all the constraints!

The function `OptimalHoldingsRegualization._get_obj` returns the correct objective function.

The function `OptimalHoldingsStrictFactor._get_obj` returns the correct objective function.

Good job with the objective function!

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