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Module 4 Quiz

LATEST SUBMISSION GRADE
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1. Select all correct statements: **1 / 1 point**

- [x] All types of Equity Analysis can be formulated in Machine Learning terms as problems of Regression, Classification, or density estimation.

Correct
Correct!

- [ ] Fundamental analysis is named so because its predictions are more important for trading and asset management than predictions based on any other approach.
- [x] Quantitative Analysis deals with probabilistic models that predict performance of securities and portfolios using pricing (market) data, as well as other data such as macro-economic data.

Correct
Correct!

- [ ] Alternative data is a different name for out-of-sample data.

2. Select all correct statements: **1 / 1 point**

- [ ] Firms with a high the Book-to-Market Equity (B/M) ratio are less attractive for investing that firms with a low B/M ratio.
- [x] There are three major categories of features for Value investing: Profitability, Leverage/Liquidity, and Operating Efficiency.

Correct
Correct!

- [x] Gross Margin is equal to Sales minus Cost of Goods Sold (COGS).

Correct
Correct!

- [ ] Fundamental accounting variables include, among other variables, quarterly stock returns.

3. Which statement below is correct: **1 / 1 point**

- ( ) As Bayes' formula uses prior probabilities, Bayesian probabilities are too subjective to be taken seriously in any business that deals with money.
- (•) The Evidence in Bayesian probability is the denominator in the Bayes' rule. As it does not depend on Theta, it should not matter if all we want to do is to find the best value of Theta.
- ( ) The Evidence is NEVER important for Bayesian statistics, as we can always work with un-normalized probabilities.

Correct
Correct!

4. Select all correct statements: **1 / 1 point**

- [ ] The relative entropy is obtained from the KL-divergence by subtracting the diverging part.
- [ ] The KL-divergence of two distributions $p1(x)$ and $p2(x)$ is equal to the difference of entropies of these two distributions.
- [x] The KL-divergence is a measure of dissimilarity between two distributions. It is always non-negative, and is equal zero if $p1(x) = p2(x)$

Correct

Correct!

- [x] Minimization of the negative log-likelihood function within the MLE method is equivalent to minimization of the KL-divergence between the data and model distributions.

Correct
Correct!

- [x] Linear Regression with a MSE error is equivalent to a Linear Probabilistic model with a constant Gaussian noise.

Correct
Correct!

5. Select all correct statements: **1 / 1 point**

- ( ) The fitted parameters of Logistic Regression critically depend on the initial guess: for different initial guesses, the results will always be different.
- ( ) Discriminative Probabilistic models enable simulating from a model.
- ( ) Logistic Regression is a special kind of linear regression used for logistics-related tasks in supply chains and the military.
- ( ) For a binary classification (K=2), Logistic Regression works as explained only for categorical labels (i.e. labels that cannot be convert to numbers that could be numerically compared with each other, for example "red" and "blue"). If labels are ordinal (i.e. they can be converted into numbers that could be compared with each other, for example high risk/low risk), one should use Linear Regression instead.
- (•) None is correct.

Correct
Correct!

6. Select all correct statements: **1 / 1 point**

- [ ] Both the details of the CAMELS methodology and actual CAMELS ratings assigned to all banks are available to the public at the FDIC home page https://www.fdic.gov
- [x] The FDIC Call Report data is freely available to the public.

Correct
Correct!

- [x] The FDIC assigns CAMELS ratings to all banks, and charges them insurance premia that depend on the assigned CAMELS rating.

Correct
Correct!

- [ ] The Asset Size (the second letter in the name CAMELS) is the most important factor in the final CAMELS rating assigned to a bank. If Assets are in excess of $30 Bn, the bank is given rating 1 or 2. This precludes a failure by this bank, and thus enhances the overall financial stability.
- [x] The Federal Deposit Insurance Corporation (FDIC) provides insurance for deposits at US-based commercial banks.

Correct
Correct!

7. Select all correct statements: **1 / 1 point**

- [ ] The Logistic Regression model just presented uses two features: d1 and d2.
- [x] Financial institutions are more difficult to model than corporations because they have a higher leverage and a more complex debt structure.

Correct
Correct!

- [x] In the Merton model, there is only one "predictor" d2 that depends only on the asset-to-debt ratio and asset volatility, but not on other balance sheet or income statement variables.

Correct
Correct!

- [ ] Financial institutions are more difficult to model than corporations because their fate is in the hands of the FDIC, rather than shareholders, and who knows what they will decide?