

QF632-2025-W10

Number of participants: 16



1. In Bayesian Optimization, what role does the kernel function play?

3 correct answers
out of 11 respondents

It calculates the loss of the model.



3 votes

It optimizes the hyperparameters of the model.



5 votes

It determines the similarity between points in the input space.



3 votes

It initializes the parameters of the model.



0 votes



Why is Bayesian Optimization often 2. used for hyperparameter tuning in machine learning?

12 correct answers
out of 14 respondents

It provides exact solutions for the optimal hyperparameters.

0%

0 votes

It efficiently explores the search space and exploits the found knowledge to find near-optimal solutions.

86%

12 votes

It reduces the likelihood of overfitting in the model.

7%

1 vote

It guarantees convergence to the global optimum.

7%

1 vote



The Expected Improvement

3. acquisition function in Bayesian Optimization quantifies what?

3 correct answers
out of 11 respondents

The probability of improvement at a new query point.



5 votes

The variance of the objective function at a new query point.



0 votes

The likelihood of finding the global optimum at a new query point.



3 votes



The expected decrease in objective function value at a new query point.



3 votes



How might Bayesian Optimization

4. be utilized in portfolio optimization?

11 correct answers
out of 12 respondents

To predict the stock prices for the next trading day.



1 vote

To calculate the historical volatility of a portfolio.



0 votes

To find the asset allocation that maximizes the Sharpe ratio.



11 votes

To determine the market capitalization of assets in a portfolio.



0 votes



5. **The choice of kernel in a Gaussian Process impacts the Bayesian Optimization process. What aspect does it particularly influence?**

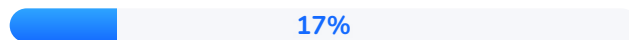
7 correct answers
out of 12 respondents

The convergence rate of the optimization algorithm.



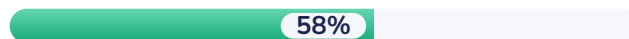
3 votes

The generalization error of the model.



2 votes

The representation of correlations between points in the input space.



7 votes

The computational complexity of training the model.



0 votes