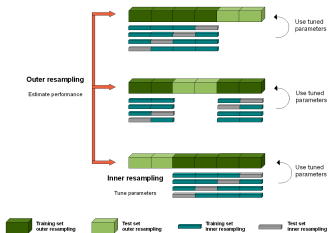


A 3x3 grid with a blue path starting at the top-left cell (0,0) and ending at the bottom-right cell (2,2). The path consists of the following cells: (0,0), (0,1), (1,1), (1,2), and (2,2). The cells (0,2), (1,0), and (2,0) are marked with a black 'X'. The cells (0,1), (1,1), and (2,2) are marked with a grey circle. The cells (1,0) and (2,0) are empty.

Nested Resampling Procedure



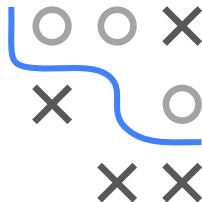
- Understand how the 3-way split of the data can be generalized to nested resampling
- Understand the goal of nested resampling
- Be able to explain how resampling allows to estimate the generalization error

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NESTED RESAMPLING

Just like we can generalize hold-out splitting to resampling to get more reliable estimates of the predictive performance, we can generalize the training/validation/test approach to **nested resampling**.

This results in two nested resampling loops, i.e., resampling strategies for both tuning and outer evaluation.



NESTED RESAMPLING - INSTRUCTIVE EXAMPLE

Taking again a look at the motivating example and adding a nested resampling outer loop, we get the expected behavior:

