

MACHINE LEARNING

A Data Science Solution to the Multiple-Testing Crisis in Financial Research

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When a researcher conducts multiple analyses, and from them he reports only the best outcome, that finding is more likely to be false than if a single analysis would have been conducted. In the statistics literature, this problem is known as "selection bias under multiple testing" (SBuMT). The key to addressing SBuMT is to disclose the intermediate results that the researcher has discarded. With that information, it is possible to evaluate the probability that the best outcome is actually false, as a result of multiple testing. In this paper, we present a real example of how multiple testing information can be reported. We use that information to estimate the Deflated Sharpe Ratio of an investment strategy.

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