

Bootstraps

Henry Wei

Hi, my friend. Last week I learned the bootstrap method. Let me introduce it to you.

In general, the bootstrap method is a resampling technique used to estimate statistics on a population by sampling a dataset with replacement. By sampling, we mean selecting the group that we will actually collect data from in our research and, by resampling, we mean using a series of techniques used in statistics to gather more information about a sample.

Specifically speaking, it can be used to estimate summary statistics such as the mean or standard derivation. For example, if we want to get the mean of service year of the plane of Air Canada, then, firstly, we can let the samples be 50 planes of Air Canada in one of the Canada Airports. Secondly, we can collect the service year of each plane, which is a total of 50, and write the service year of each plane on a piece of paper, scrolling and putting all 50 papers into a bag. Thirdly, we shuffle the bag and pick a piece of paper out of the bag to log the service year on a page. Afterward, we'll put that piece of paper back in the bag. We'll repeat this procedure 50 times until we get 50 service years numbers then calculate the mean of these 50 numbers. Fourthly, we'll repeat step 3 for 100 times. Therefore, we will get 100 mean numbers. Finally, calculate the mean of these 100 mean numbers, which is the estimated mean under the bootstrap method.

To conclude, the information above is an introduction to the bootstrap method. Complete the method, it includes 4 steps in total, which are all listed above.