

Subject: Model Search with the Bootstrap

**Research Focus/
Cross-sectional Area:** Discrete-continuous and global optimization (R3)

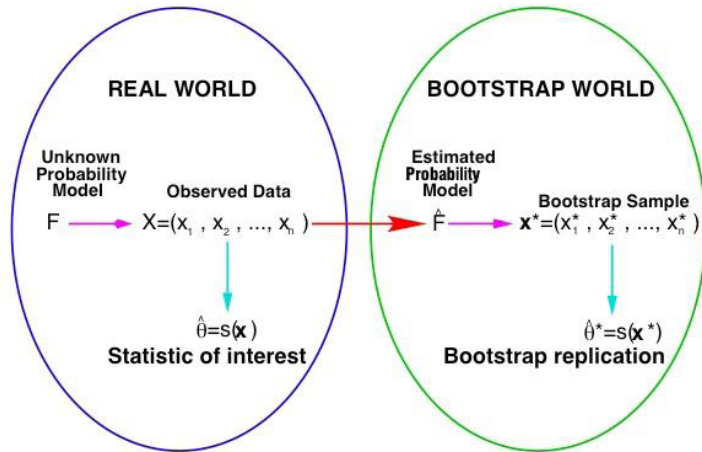
Description:

The bootstrap has been introduced as a powerful computer-based method for assessing the statistical accuracy of an estimator, such as confidence interval estimation. More recently the bootstrap has been shown, in a wide range of areas, to also perform better model selection than classical techniques, such as those based on information criteria.

The objective is to develop new bootstrap based techniques for model selection in computational engineering. Specifically, the aim is to study the performance of variants of bootstrap based procedures such as bagging and bumping in regression analysis applied to communication problems. Modeling channel impulse responses is fundamental in wireless communication where one aims at developing simple but accurate models, often a conflicting requirement. The methods will be tested with simulated and real data collected in an urban environment.

Requirements:

Good foundation in digital signal processing and statistics.



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