Nonparametrics: Perspectives and Prospectives

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Abstract: Steming from distribution-free statistics and 'quick and dirty methods', Nonparametrics has been going through an evolution which is far from being over at this juncture of time. The perspectives over the past 70 years provide good incentives to gauge the nature of changes in prospectives, and our task ahead to cope with some of these challenging statistical issues. Interdisciplinary research, specially arising in health sciences, large biological systems, genomics as well as environmental toxicologic studies have a greater appeal for nonparametrics than parametrics or even the semiparametrics. Even Bayesian methods amend well in nonparametrics, albeit amidst computational complexities. Such computational impasses are also in high-dimensional low sample size problems where parametrics can be quite misleading. Knowledge discovery and data mining tools are gaining popularity from application point of view, and it would be our mission to provide more adequate statistical interpretation and theoretical justification for such computational tools. A notable case of stochastic ordering in a microarray data model is focused as an illustration and some of the related nonparametrics disseminated.