

# Generalized Additive Model: Theory, Methods and Applications over Thirty Years

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**Abstract:** The 1984 Stanford University Biostatistics Division Technical Report of Hastie & Tibshirani (1984) introduced the concept and term “generalized additive model (GAM)”, which has been popularized by Hastie & Tibshirani (1986 *Statistical Science*), and Hastie & Tibshirani (1990 Chapman and Hall, 15306 Google Scholar citations). GAM has since found wide applications from environmental studies to predictive policing, from credit rating to survival analysis. I will discuss the statistical theory for GAM, the development of which reflects the diversity of statistics as a discipline over the past 30 years. Some interesting real life applications of GAM are also presented.