

# STATISTICAL ANALYSIS AND DATA MINING

Research Article

## Nonlinear vertex discriminant analysis with reproducing kernels

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### Abstract

The novel supervised learning method of vertex discriminant analysis (VDA) has been demonstrated for its good performance in multicategory classification. The current paper explores an elaboration of VDA for nonlinear discrimination. By incorporating reproducing kernels, VDA can be generalized from linear discrimination to nonlinear discrimination. Our numerical experiments show that the new reproducing kernel - based method leads to accurate classification for both linear and nonlinear cases. © 2012 Wiley Periodicals, Inc. *Statistical Analysis and Data Mining*, 2012

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