

SenSIP/IEEE SPCOM Student Seminar Series

Noisy Data Removal for Regression Problems

Presenter: Alan Wisler, PhD Student

February 6 (Friday), 2015, 2:30pm

Room: GWC 487

Abstract

In regression analysis, outliers in the data can induce a bias in the learned function, resulting in larger errors. In this paper we derive an empirically estimable bound on the regression error based on a Euclidean minimum spanning tree generated from the data. Using this bound as motivation, we propose an iterative approach to remove data with noisy responses from the training set. We evaluate the performance of the algorithm on experiments with real-world pathological speech (speech from individuals with neurogenic disorders). Comparative results show that removing noisy examples during training using the proposed approach yields better predictive performance on out-of-sample data.

Biography:



Alan completed both his BS and MS degrees in electrical engineering at the University of Texas at Dallas. Since 2013 Alan has been pursuing his PhD at Arizona State University under advisers Dr. Visar Berisha and Dr. Andreas Spanias. His research is primarily focused on the study and development of empirically estimable algorithm-agnostic performance bounds and their applications to statistical learning challenges in speech processing.

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