

# Gradient Boosting: Overview, Theory and Applications to Big Data Analytics

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## ABSTRACT

We begin with a review of the history of gradient boosting, dating back to the LMS algorithm of Widrow and Hoff in 1960 and culminating in Freund and Schapire's AdaBoost and Friedman's gradient boosting and stochastic gradient boosting algorithms in the period 1999-2002 that heralded the big data era. The role played by gradient boosting in big data analytics, particularly with respect to deep learning, is then discussed. We also present some recent work on the mathematical theory of gradient boosting, which has led to some refinements that greatly improves the convergence properties and prediction performance of the methodology.

Full workshop schedule: <http://ims.nus.edu.sg/events/2018/wstat/wk1.php>