



2023 September Luncheon

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Improving Predictive Performance with Extreme Gradient Boosting

Date: Thursday, Sept 21, 2023

Time: 12PM - 2:00PM Central

Location: East Bank Club 500 N Kingsbury St, Chicago, IL 60654

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There is no fee to create an account.**

Presenter:

Joseph Retzer: UW-Milwaukee, retzerjj@uwm.edu

Summary:

High dimensional data analysis for predictive modeling is both challenging and valuable. A recent extension of the gradient boosting approach, Extreme Gradient Boosting (XGBoost), shows great promise in this area as demonstrated by its success in numerous Kaggle competitions. This presentation will outline XGBoost and illustrate its use in the development of a predictive model applied to customer database scoring.

Abstract:

Various predictive models, e.g. CART, Random Forest analysis, bagging, neural networks, support vector machines, etc., have been shown to provide useful information, under various circumstances, for out-of-sample prediction. An alternative, known as stochastic gradient boosting (see Friedman, 2001 and Friedman et. al. 2000), has demonstrated remarkable results and is often the preferred choice for predictive modeling.

All afore mentioned methods however may be adversely affected when working with very large and/or high dimensional data. In other words, these methods may not "scale" well when applied to large data sets and, in addition, can "overfit" when applied to data sets with many variables.

In this presentation we apply "XGBoost" (eXtreme Gradient Boosting), developed by Tianqi Chen and Carlos Guestrin of the University of Washington, for categorical response prediction. XGBoost provides a regularized, scalable and flexible (i.e. customizable and tunable), implementation of gradient boosting. The presentation begins with a brief, intuitive overview of ensemble-based boosting, focusing on XGBoost. Next, XGBoost will be demonstrated through its application to a customer database cluster scoring exercise using a high dimensional dataset.

A brief discussion of hyper-parameter tuning via cross validation will also be discussed. Tuning aids in hyper-parameter value selection and is necessary to insure XGBoost provides optimal predictive performance.

Agenda:

12pm - 12:15pm	Welcome / Check-in
12:15pm -1:15pm	Presentation and Q&A
1:15 PM – 2:00 PM	Networking

Registration:

- Members - \$35
- Non-Members - \$40
- Students - \$10

Click [here](#) to register.

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About the speaker:

Joseph J. Retzer works as a "Data Science Expert – Segmentation" at Acxiom, an Arkansas based customer intelligence company, where he recently remodeled Acxiom's Personix Life Stage Segmentation framework at scale. He is also a faculty member of the Lubar School of Business, UW-Milwaukee and is a Northwestern Mutual Data Science Institute Affiliated Faculty Member. He has over 25 years of experience in market research analytics. During this time, he has developed innovative statistical techniques in areas including key driver measurement in the presence of collinearity, prediction in covariance structure models, modeling of behavioral loyalty using survival analytic techniques, genetic algorithm-based segmentation and Bayesian inference.

He is the 2004 corporate "Mark of Excellence in Research Award" winner at Maritz Research. He has taught statistics, economics, and management science curricula at the University of Wisconsin-Milwaukee. He has also won best presentation awards at both the Sawtooth Software market research and AMA ARTF (Advanced Research Techniques Forum) conferences.

His articles have appeared in various journals including "Journal of Econometrics", "Quantitative Marketing and Economics", "Decision Sciences", "International Journal of Market Research" and "European Journal of Operational Research". In addition, he has presented at numerous regional, national and international applied research seminars. He is a frequent presenter at the AMA Advanced Research Techniques (ART) Forum and Sawtooth Software practitioner conferences. He has served on the ART forum conference selection committee and conducted invited tutorials on "Advances in Market Segmentation" and "Predictive Analytics using Decision Trees" at Sawtooth Software's market research conference the past 3 consecutive years.

His research interests include applied statistical and econometric analysis of marketing models in both classical and Bayesian frameworks. He holds a bachelor's and master's degree in economics, and Ph.D. from the University of Wisconsin-Milwaukee

We're looking forward to seeing everyone in person again!!

Click [here](#) to register.

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