WSS Short Course
Art and Practice of Classification and Regression Trees

Date: Wednesday, January 6, 2016
Time: 9:00 am – 4:30 pm
Place: Bureau of Labor Statistics
        Conference rooms 1-3, 2 Massachusetts Avenue NE, Washington, DC

Course Content:

The first regression tree algorithm was published in JASA fifty-two years ago. This course briefly reviews the history of the subject and presents the state of the art, with emphasis on the Generalized, Unbiased, Interaction Detection, and Estimation (GUIDE) algorithm. GUIDE has several advantages over other algorithms, including unbiased variable selection, fast computational speed, and the ability to fit piecewise-linear least squares, least median of squares, quantile, Poisson, proportional hazards, and other models to multiple, longitudinal, and censored response data. The techniques are illustrated with applications to real problems, such as classification of dissatisfied credit card holders, subgroup identification in precision medicine, and missing value imputation in sample surveys. The GUIDE software is free and is available at www.stat.wisc.edu/~loh/guide.html. Publications that employ GUIDE and its predecessors can be found here: www.stat.wisc.edu/~loh/apps.html.

Some useful references:

1. Loh, W.-Y., He, X., and Man, M. (2015), A regression tree approach to identifying subgroups with differential treatment effects, Statistics in Medicine, 34, 1818–1833.
2. Loh,W.-Y. (2014), Fifty years of classification and regression trees (with discussion), International Statistical Review, 34, 329–370.
3. Loh, W.-Y. and Zheng, W. (2013), Regression trees for longitudinal and multiresponse data, Annals of Applied Statistics, 7, 496–522.
4. Loh, W.-Y. (2011), Classification and regression trees, Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 1, 14–23.
5. Loh, W.-Y. (2009), Improving the precision of classification trees, Annals of Applied Statistics, 3, 1710–1737.

About the Instructor: Dr. Wei-Yin Loh is Professor of Statistics at the University of Wisconsin, Madison. He has been developing algorithms for classification and regression trees for thirty years and is the author of GUIDE. He is a fellow of the American Statistical Association and the Institute of Mathematical Statistics and a consultant to government and industry. He has given one- and multi-day short courses on the subject to universities, industry groups, and at statistical meetings; see
www.stat.wisc.edu/~loh/courses.html.

Course Schedule:

8:15 - 9:00	Coffee, breakfast, and check in
9:00 - 10:30	Brief history of classification and regression trees
10:30 - 10:45	Break
10:45 - 12:15	GUIDE classification
12:15 - 1:15	Lunch (provided)
1:15 - 2:45	GUIDE regression
2:45 - 3:00	Break
3:00 - 4:30	Applications to real data

Advance registration: In addition to your RSVP here, please go to https://www.123signup.com/register?id=pssgm to register and pay for the class. Online registration will close on January 3, 2016; earlier if the course fills up.

Registration Fee:
Full-time students (at most 8): $50 advance, $70 at the door
WSS members: $160 advance, $180 at the door
All others: $210 advance, $240 at the door

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