

Seminario Aleatorio

Sesión 382

Irrational Exuberance: Correcting Bias in Probability Estimates

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Abstract

We consider the common setting where one observes probability estimates for a large number of events, such as default risks for numerous bonds. Unfortunately, even with unbiased estimates, selecting events corresponding to the most extreme probabilities can result in systematically underestimating the true level of uncertainty. We develop an empirical Bayes approach “Excess Certainty Adjusted Probabilities” (ECAP), using a variant of Tweedie’s formula, which updates probability estimates to correct for selection bias. ECAP is a flexible non-parametric method, which directly estimates the score function associated with the probability estimates, so it does not need to make any restrictive assumptions about the prior on the true probabilities. We demonstrate that ECAP can provide significant improvements over the original probability estimates.

Working paper: <http://faculty.marshall.usc.edu/gareth-james/Research/Probs.pdf>

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<https://itam.zoom.us/j/95465214314?pwd=R2JFQWE4WFpJM1VzYTBUZUZFdDMYUT09>

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