



Seminar Series in Statistics and Data Science

28.01.2019, 14:15 @ Erling Sverdrups plass, Niels H. Abels hus, 8th floor

Kristoffer H. Hellton: Penalized angular regression for personalized predictions

Abstract: Personalization is becoming an important feature in many predictive applications. We introduce a penalized regression method implementing personalization inherently in the penalty. Personalized angle (PAN) regression constructs regression coefficients that are specific to the covariate vector for which one is producing a prediction, thus personalizing the regression model itself. This is achieved by penalizing the angles in a hyperspherical parametrization of the regression coefficients. Using a parametric bootstrap procedure to select the tuning parameter, simulations show that PAN regression can outperform ordinary least squares and ridge regression in terms of prediction error. We further prove that by combining the PAN penalty with an L2 penalty the resulting method will have uniformly smaller mean squared prediction error than ridge regression, asymptotically. Finally, we demonstrate the method in a medical application.



Kristoffer H. Hellton
Norwegian Computing Center

Kristoffer H. Hellton is a senior research scientist at the Norwegian Computing Center and had a postdoctoral position at University of Oslo, Department of Mathematics in the FocuStat project, with a Ph.D. in Biostatistics.

His research interests include high-dimensional statistics, supervised learning, dimension reduction techniques and model selection. He has also taught various courses within statistics and machine learning.

Next seminar

11.02.2019 @ 14:15 **Johan Pensar**
University of Helsinki (FIN) → University of Oslo

Contact Information

Riccardo De Bin – debin@math.uio.no
Riccardo Parviero – riccarpa@math.uio.no