

1126-68-278

**Paul E Anderson\*** ([andersonpe2@cofc.edu](mailto:andersonpe2@cofc.edu)), 66 George St, Charleston, SC 29464. *Fastfood Ridge Regression: Combining Variable Importance with Kernel Expansion Approximations*. Preliminary report.

As the complexity of a prediction problem grows, simple linear approaches tend to fail, which has led to the development of algorithms to make complicated, nonlinear problems solvable both quickly and efficiently. Fastfood, a kernel approximation method, has been shown to generate reliable models, but its current state does not offer a variable importance measure necessary to be applicable to a wide array of complex real-world problems that span from cancer prediction to financial analysis.

The aim of this research is to extend Fastfood with variable importance by integrating ridge regression. This work in progress shows how it is possible to retain the variable importance offered by ridge regression and the ability to solve nonlinear problems efficiently with Fastfood. Further, our implementation explores the computational advantages of implementing such kernel approximation methods on the large-scale data processing engine, Spark. (Received January 16, 2017)