

1116-VC-2409 **Fiona Knoll*** (fknoll@g.clemson.edu),)-110 Martin Hall, Box 340975, Clemson, SC 29634.

Explicit Johnson-Lindenstrauss projection of high dimensional data.

Johnson and Lindenstrauss (1984) proved that any finite set of data in a high dimensional space can be projected into a low dimensional space with the Euclidean metric information of the set being preserved within any desired accuracy. Such dimension reduction plays a critical role in many applications with massive data. There have been extensive effort in the literature on how to find explicit constructions of Johnson-Lindenstrauss projections. In this presentation, we will show how algebraic codes over finite fields can be used for explicit and fast Johnson-Lindenstrauss projections of data in high dimensional Euclidean spaces. This is joint work with Shuhong Gao, Yue Mao, and Lin You. (Received September 22, 2015)