Aravind Asok: **Vector bundles and A^1-homotopy theory**

This will be a survey talk about recent applications of A^1-homotopy theory to the study of vector bundles on algebraic varieties. In particular, we will discuss how techniques from obstruction theory can be used to study questions such as: when does an algebraic vector bundle split off a trivial rank 1 summand? Time permitting, we will show how these techniques can be used to produce existence results for vector bundles of low rank (e.g., rank 2) on smooth affine varieties of large dimension.