

# Boosting packages in R

- **gbm**: gradient boosting machines
  - boosted decision trees
  - C++
  - regression, classification, + extensions (e.g. survival, count data, quantile regression)
  - good, stable, maintained
  - retired (no new features)

# Boosting packages in R

- **xgboost**: extreme gradient boosting
  - R interface to very fast C++ library
  - many additional algorithm innovations
    - random X sampling, as in random forest
    - regularized training (complexity penalty)
    - large data innovations
  - current industry standard (interfaces to all major data science languages)