GBM Parameters: Ensemble

- **`ntrees:`** number of trees

- **`sample_rate:`** row sampling rate per tree (default:1)
- **`col_sample_rate_per_tree:`** column sampling rate per tree (default: 1)

(same as RF)

GBM Parameters: Individual Trees

- **Column sampling for split:**
- `col_sample_rate:` number of columns to sample on each split (default: sqrt(n) for classification, n/3 for regression)
- `col_sample_rate_change_per_level:` factor by which to increase or decrease mtries per level of tree

- **When to stop splitting?**
- `max_depth:` maximum depth of each tree
- `min_rows:` minimum rows in a leaf (i.e. stop splitting when data size is this small)
- `min_split_improvement:` **minimum relative improvement** in split criterion for a split to occur

- **Histogramming**
- `nbins`: number of bins for numeric variables (default: 20)
- `nbins_top_level`: can be used instead of nbins; nbins will then decrease by 2 each level
- `nbins_cats`: `histogram_type`: number of bins for categorical variables (default: 1024)

- `max_abs_leafnode_pred`

GBM Parameters: Ensemble

(same as RF)

- **ntrees:**   number of trees

- **sample_rate:**   row sampling rate per tree (default:1)
- **col_sample_rate_per_tree:**   column sampling rate per tree (default: 1)