Exceptional Model Mining:

(http://www.cs.uu.nl/groups/ADA/pubs/2008/exceptional_model_mining-leman,feelders,knobbe.pdf)

Objective:
Find subgroups where a model fitted to the subgroup is substantially different from that same model fitted to the entire database.

Procedure:
Build Model, then define quality measure to define how exceptional a subgroup is.

Find Subgroup: (Any Tool??)
Beam Search Strategy, level-wise search, on each level, the best-ranking k patterns are refined to form the candidates for the next level.

Three types of models for EMM:
1.Correlation(without output attribute)
Quality Measure: perform a H_0 hypothesis test on the difference between the correlation in subgroup and its complement

2.Regression: (Linear Regression)
Quality Measure: Perform significance test on Slope Difference of a subgroup and its complement

3.Classification:
Logistic Regression(Quality Measure: 1-p_value), Decision Table Majority Model(Quality Measure: BDeu score, from Bayesian)

(***More on significance test? Define a Model??)

Exploiting False Discoveries:

(https://pdfs.semanticscholar.org/2441/709d56ae4f68a328db987570e7e17311e7cd.pdf)

Objective:
1.Build statistical model for false discoveries(exceptional subgroup??)
2.Compare quality measures and determine how good individual measures is in subgroup

Procedure:
1.use a randomization technique to generate baseline subgroups
2. build a statistical model based on subgroups' quality measures
3.choose the best quality measure(Friedman test,chi-square)