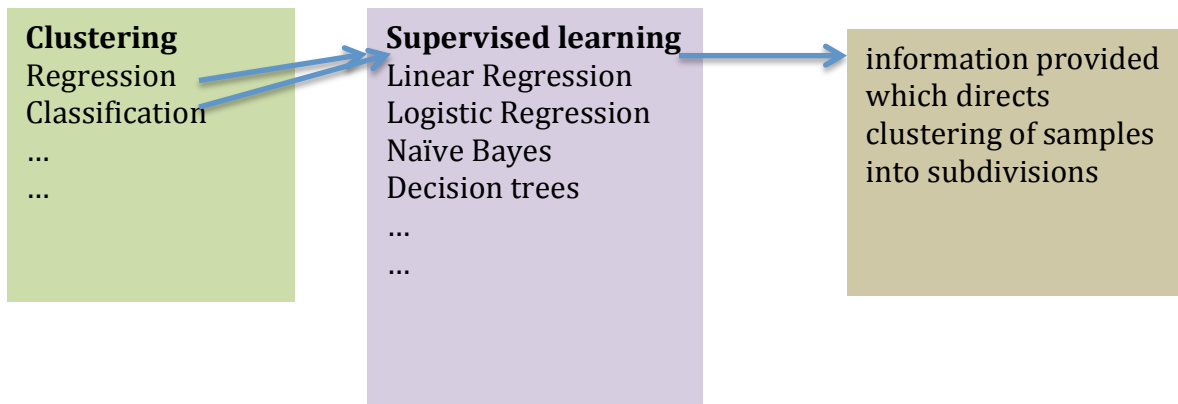


Admixture/Structural/Ancestry Analysis

A method of inferring someone's geographical origins based on an analysis of their genetic ancestry (One of the components of an autosomal DNA test). Admixture calculations offer genetic ancestry analysis for individuals tested for high-density SNP data. It always build ancestry components called cluster.

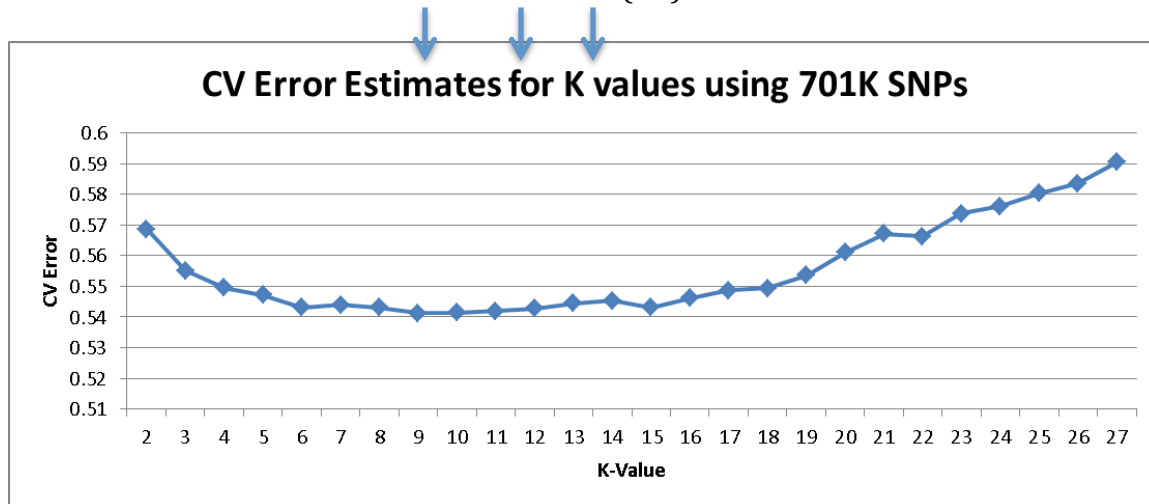
Clustering

Machine learning and data mining)



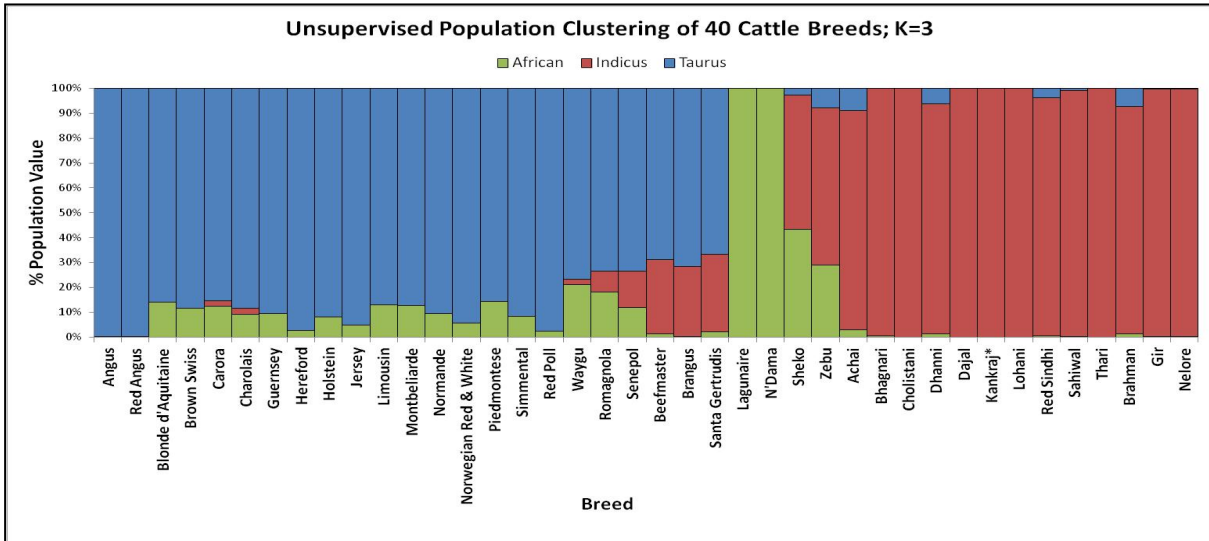
- Mathematical algorithms used to detect most distinct genetic “signature” or “pattern”⁵⁰
The algorithms of clustering are categorized according to their models including connectivity models, centroid models, distribution models, density modes....
- K- values: K values denote the number of populations algorithm identifies⁵⁰
 - ◆ K=2, K=3, etc...
 - ◆ Optimal K-value

Maximum likelihood or Cross-validation (CV)



Unsupervised: no prior information given to direct clustering of samples

K=4



Resource(14):Heather Huson and etc.“Genome-wide association study and ancestral origins of the slick hair coat in tropically adapted cattle” Published online 2014 Apr 29. doi: 10.3389/fgene.2014.00101

Companies that offer Admixture analysis (Check them online!):

23and Me—Ancestry Composition

Family Tree DNA—Population Finder

Ancestry.com—Genetic Ethnicity

The genographic Project—Who Am I?

BritainsDNA—All My Ancestry

decode genetics