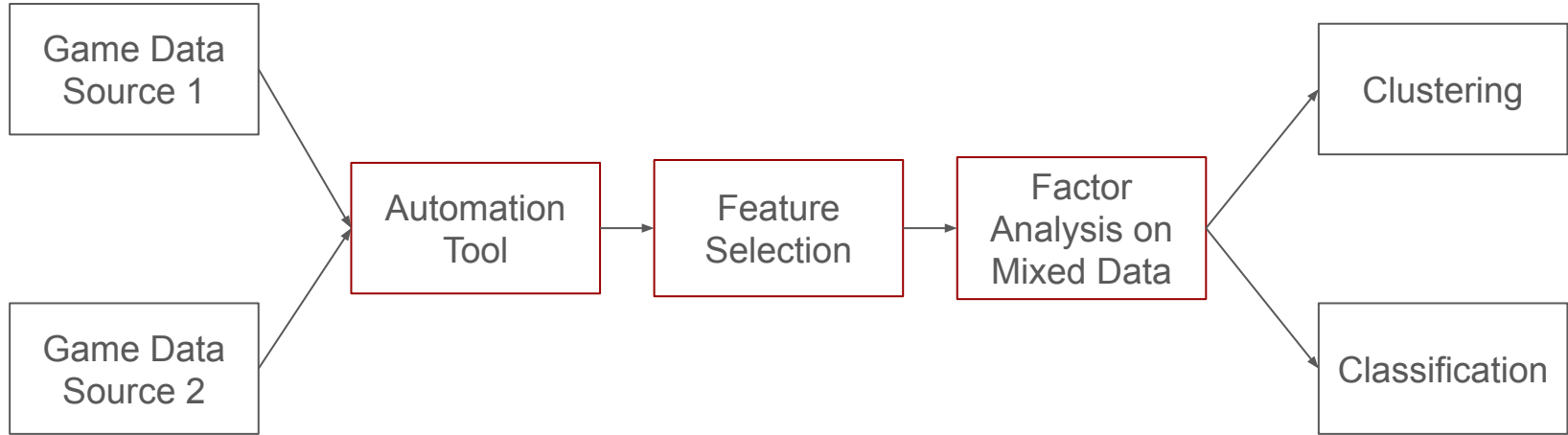# Game Insights

Shrunjala Mul

What is Game Insights?

Project of the R&D team of a global gaming company.
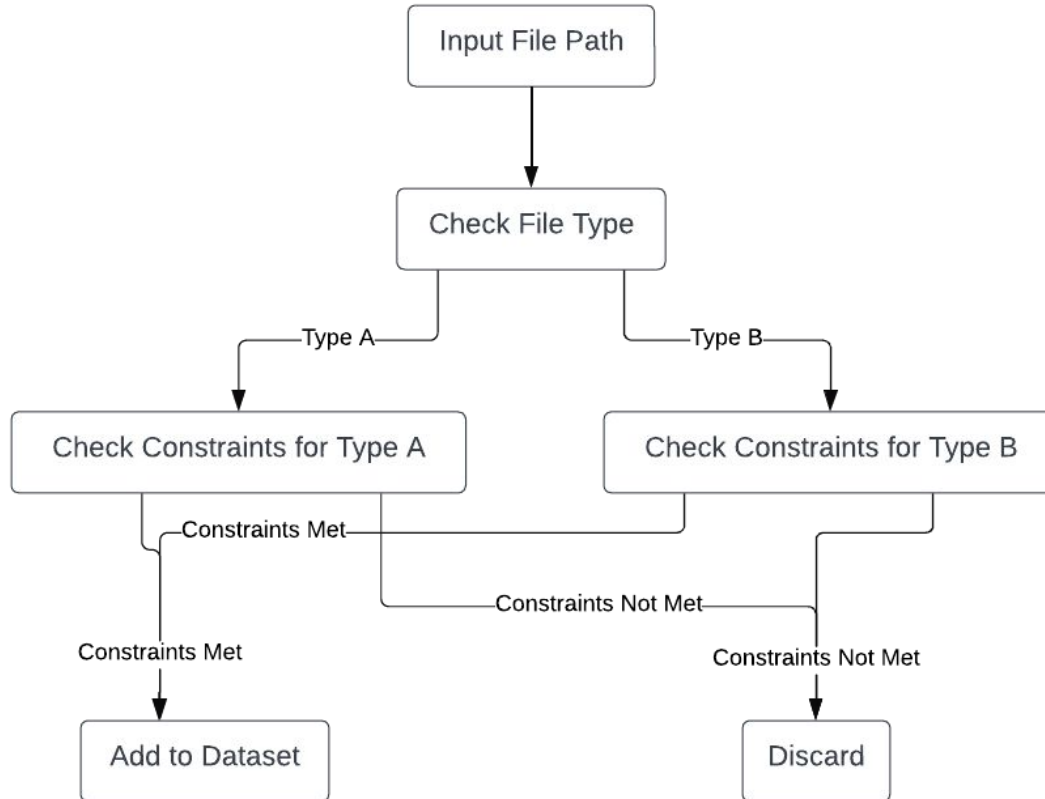
Goals:

1. Collect game data from various sources.
2. Analyse the data to uncover patterns.
3. Predict the success or failure of the game.

Process Workflow

Automation Tool

Data Description
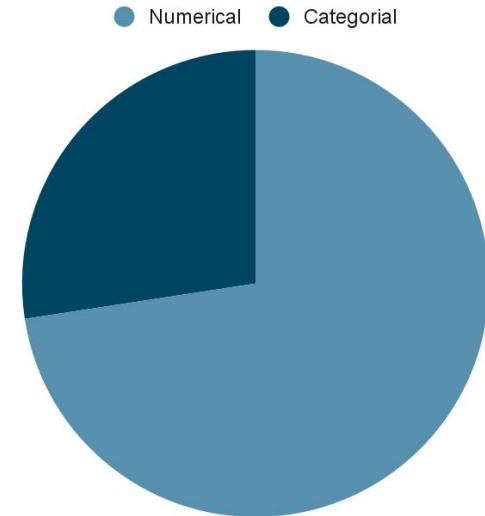
Dimension of Data 50 x 100

Feature Examples
- simulation data
- game mechanics
- game descriptions

Target Variables

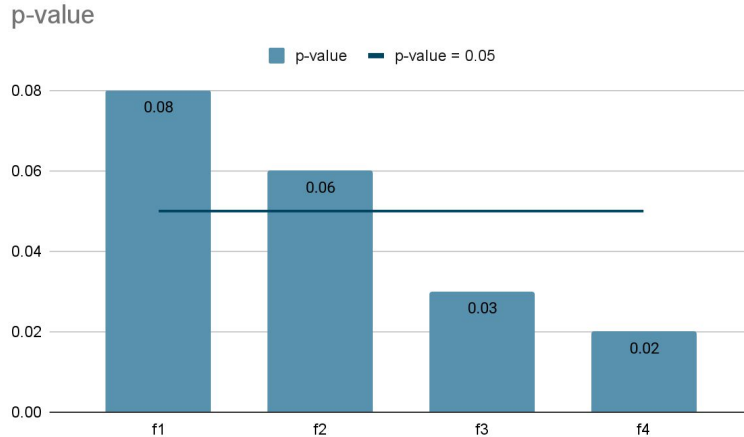| Score	Above 95	95-85	85-75	75-65	5-55	Below 55
Grade	A	B	B-	C	C-	D

Feature Type

Numerical   Categorial

Feature Selection

Chi-Squared Test: Categorical

H_0: Feature f_n has no association with *grade*

H_1: Feature f_n has a relationship with *grade*

p-value

Pearson's Correlation Coefficient: Numerical

Measures the strength and direction of linear relationship between two variables.

If $cor \geq 0.85$, the two variables are highly correlated.

	f_1	f_2	f_3	f_4
f_1	1.00	0.65	0.83	0.98

After Feature Selection

Dimension of Data: ~~50~~ 28 x 100

Cluster Evaluation Methods:

Measures of similarity and dissimilarity between clusters.

Silhouette Score

- Evaluates the inter and intra cluster distance.
- Doesn't require the ground truth.

Adjusted Rand Index (ARI)

- Evaluates distance between the target clusters and generated clusters.
- Requires the ground truth.

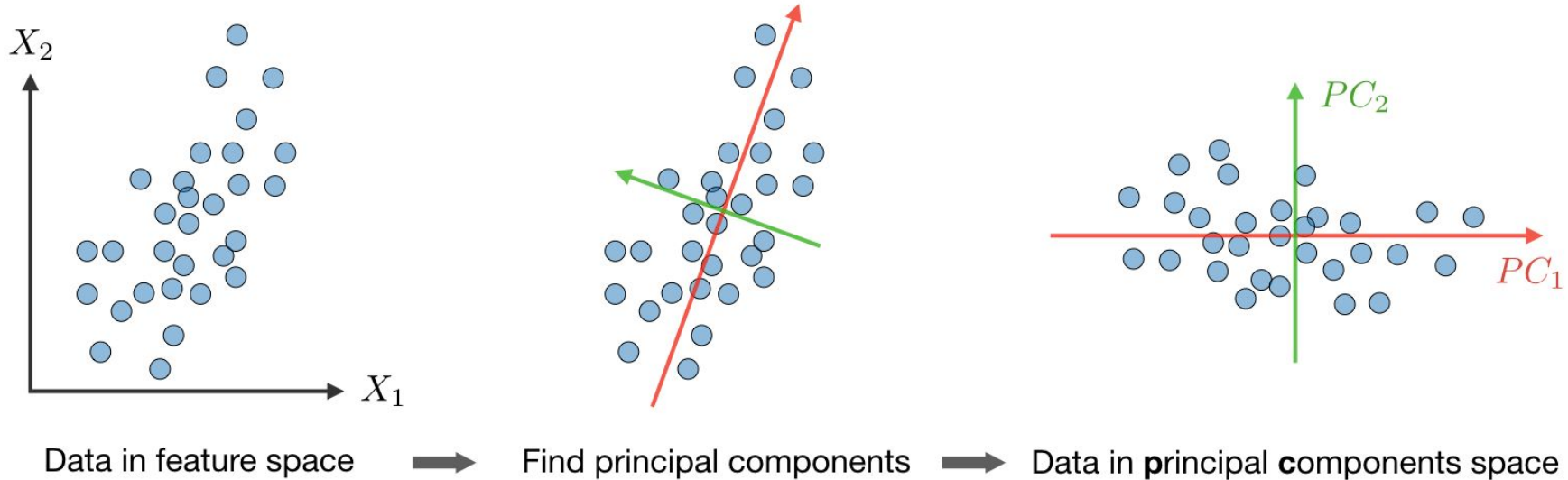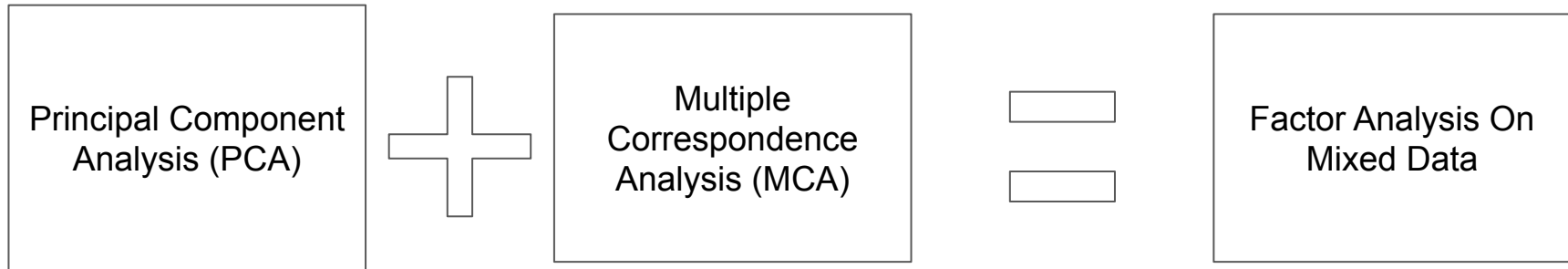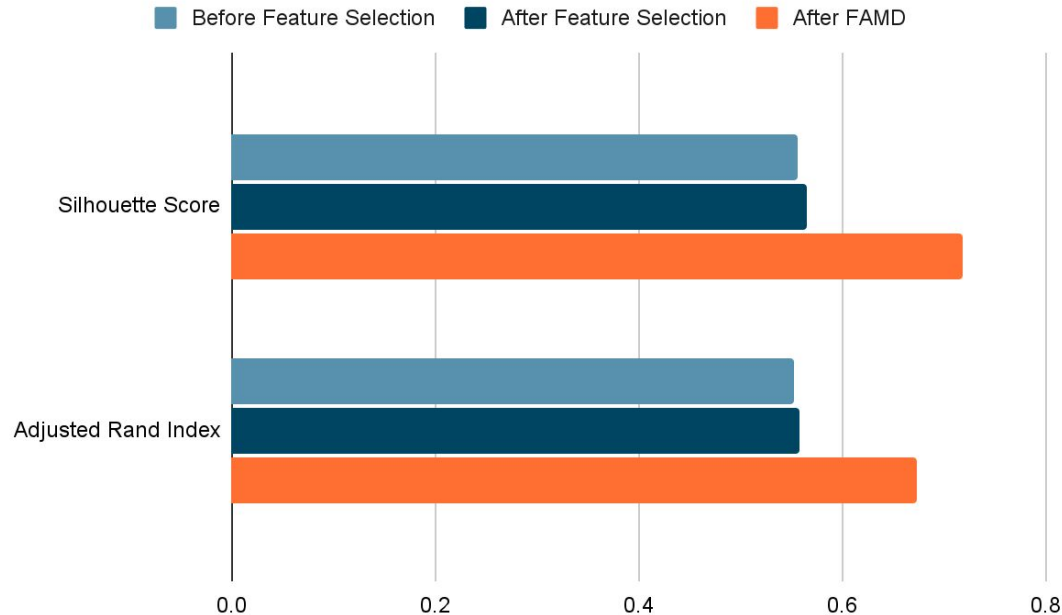Before Feature Selection   After Feature Selection
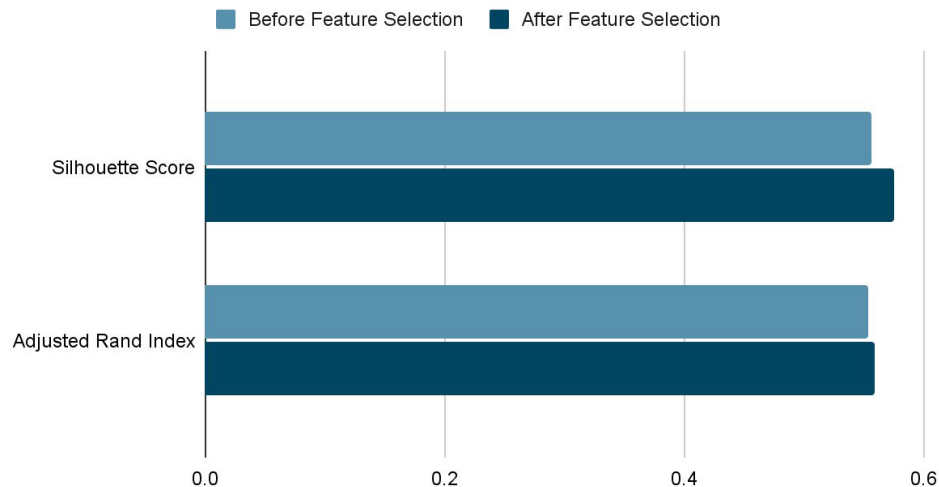
Dimensionality Reduction

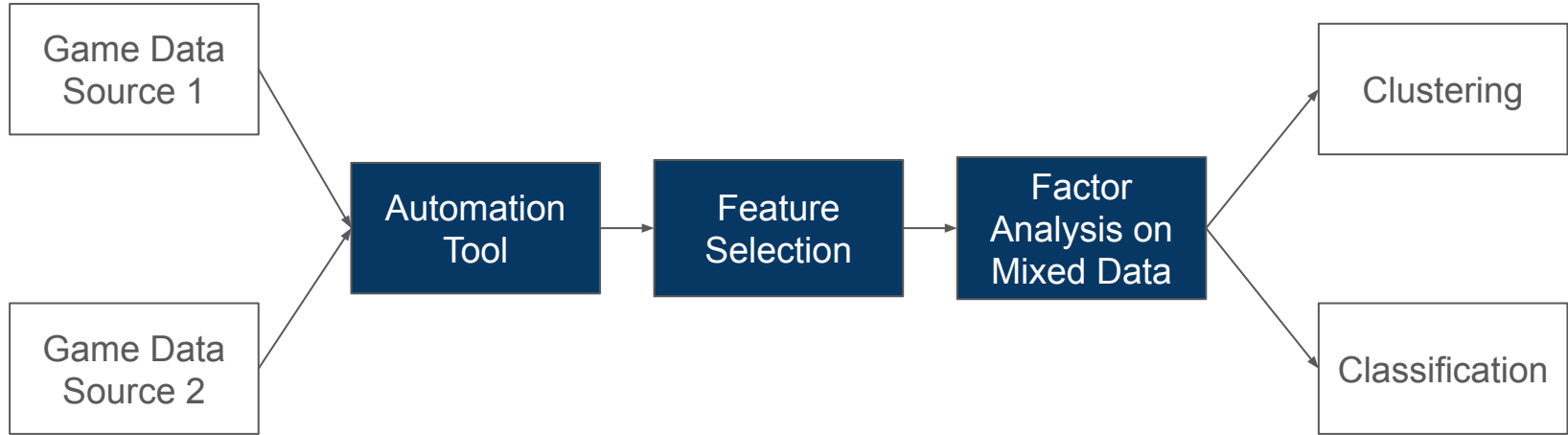Fig. 1: Principal Component Analysis

Factor Analysis On Mixed Data

Principal Component Analysis (PCA)

+

Multiple Correspondence Analysis (MCA)

=

Factor Analysis On Mixed Data

After Feature Selection and FAMD

Dimension of Data: ~~28~~ 2 x 100

Legend: Before Feature Selection, After Feature Selection, After FAMD

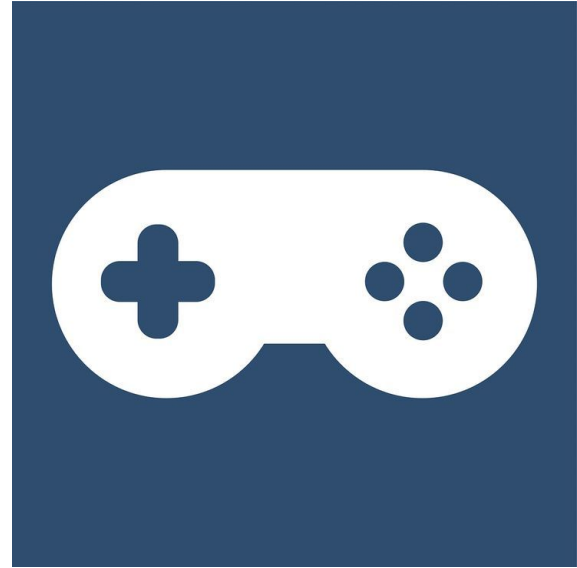Chart categories: Silhouette Score, Adjusted Rand Index

X-axis: 0.0, 0.2, 0.4, 0.6, 0.8

Process Workflow

Timeline
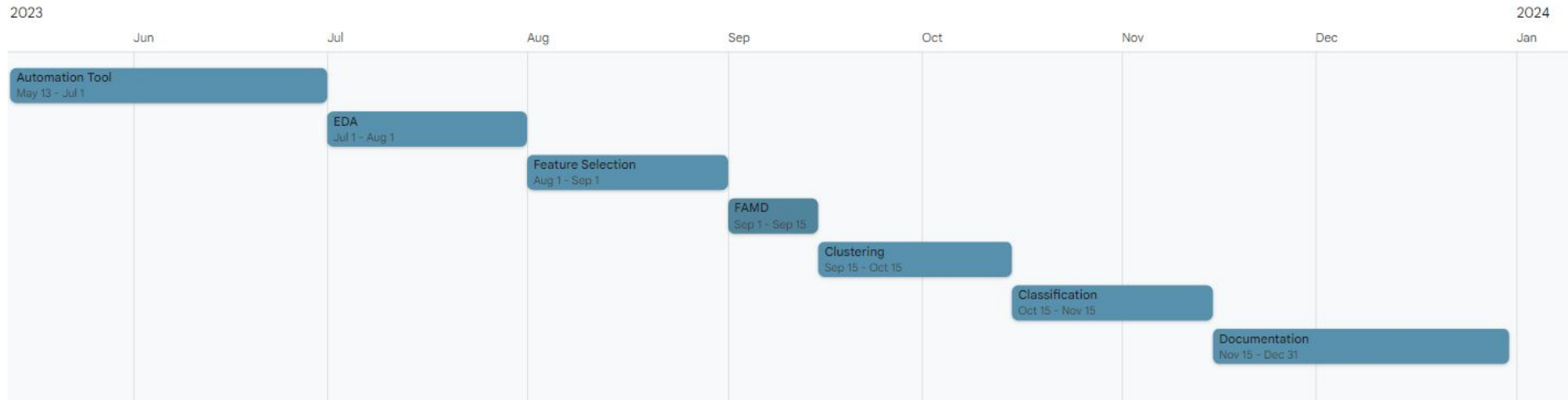
Thank you!
Questions?

Game Image