Context:
The purpose is to create a **painting program** which can **automatically learning styles**

**STYLE ANALYSIS**
1. Build **analysis criteria vectors** for each style reference image, from a large set of criteria: histograms, lines quantification, symmetry analysis, …
2. Define **style subspace** using Principal Components Analysis on vectors
3. **Project** each vector in the style subspace
4. Define the **style target zone** as the smallest zone containing all the projections

**CREATION PROCESS**
Do:
1. Apply **random image process** on image: color operation, image fusion, edge sharpening...
2. Build the analysis criteria vector of the image and project it in the **style subspace**
3. If the projection is **farther to style target zone** than before, **undo** the last image process
   **Until the projection is in the style target zone**

**Experimental results**

Results are close to the expected style, in regard to the criteria of analysis. However, for particular styles, like Vangogh’s style, some characteristics can’t be analyzed, and then reproduced.

In case of "simple" styles, the result is not always obtained by the simplest way.

For the same inputs, the result will always be different, due to the random creation process.