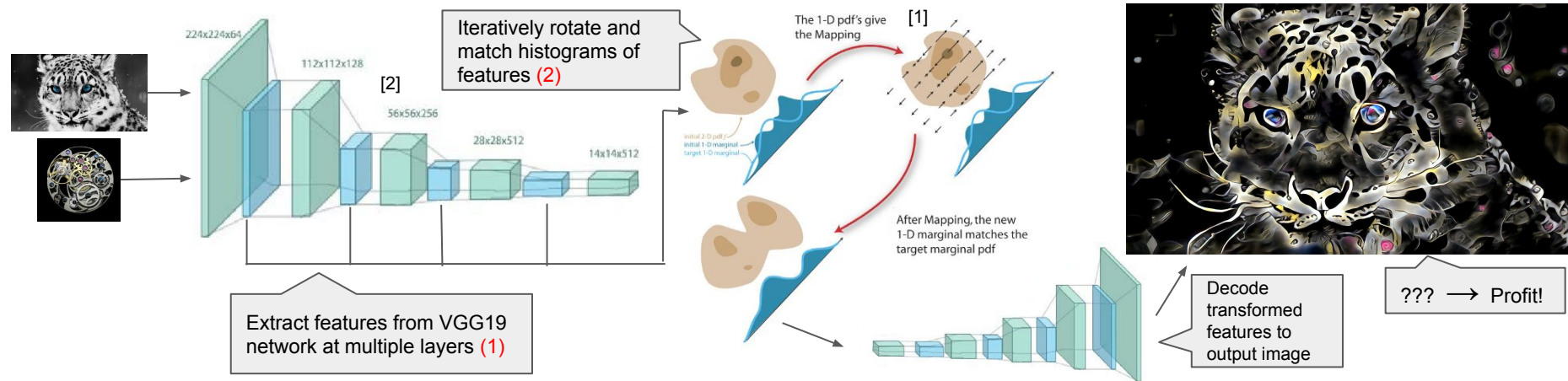


# Optimal Textures: Fast & Robust Texture Synthesis through Optimal Transport

Paper by Eric Risser

Replication by Hans Brouwer & Jim Kok



- Blazing fast optimization algorithm for texture synthesis, texture mixing, style transfer and color transfer
- Avoids costly backpropagation
  - Uses first-order statistics (histogram) of VGG-19's internal representations rather than second order correlations (Gram matrix) (1)
  - Directly match histograms of synthesized image to those of the target (2)
- Speed boosts
  - Multi-scale progressively-grown rendering for larger scale structures and efficiency
  - PCA on feature representations for even faster synthesis

Try it yourself! <https://github.com/jcbrouwer/optimaltextures>