EPFL Computer Vision Lab
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Mathieu Salzmann
Structured Layers in Deep Networks

\[ \mathcal{N}_c(0, \Sigma) \quad W_c(\Sigma, n) \quad \chi_n^2 \quad \mathcal{N}(\beta, \gamma) \]
Interpretable Deep Networks

Input image

Conv layers

Conv feature map

Attention module

Attention maps

Attention Filters

global pooled

Scores

Attention-aware VLAD layer

Structured representation module

Image representation

Scores

casino  studio music  operating room  video store

Nakka & Salzmann, BMVC’18
Compact Deep Networks

Standard network: 3.7M parameters

Our approach: 290K parameters
Reconfiguring Comics in our Digital Era

M. Salzmann      R. Baroni      S. Süsstrunk
Motivation

Over the years, authors have always had to adapt their creations

E.g., from strip...
Motivation

... to album
Motivation

Painstaking manual process

Colorizing
Viewpoint change

Even more acute nowadays with transfer to digital devices
Goal

Facilitate comics reconfiguration
Project

Large collaborative project:
• 5 PhD students (3 EPFL, 2 UNIL)
• 1 postdoc
• 1 research engineer

Collaborations with
• Artists (e.g., Zep)
• Lausanne library
• Angoulême comics festival
• BDFil
• Comics school in Geneva
Technical Work

3 EPFL PhD students
- Comics Perception (IVRL)
- Comics Segmentation (CVLab - IVRL)
- 3D Reconstruction of Comics (CVLab)

Contact us!