WATER-INK RENDERING

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Water-Ink Painting: Overview
Water-Ink Painting: Category
Pipeline: Design

Original Image → Salient Map → Resized Image → Blurred Image → Saliently Awared Image → Outline Abstract → Shade Abstract → Color Abstract → ink-diffused Color → ink-diffused Shade → ink-diffused Outline → Result

downsize for efficiency

Intensity, Color, Orientation, Conspicuity, XDoG, Raoden + Median Filter
Pipeline: Implementation

Original Image

downsize for efficiency

Intensity
Color
Orientation

Conspicuity Mao

XDoG

Raoden + Median Filter
Detail: Saliency-Aware Image
Detail: Color Mapping

piecewise quadratic function
Detail: Ink-Diffusion (w./ saliency)
Sample Results
Drawback: Color + Outline
The Next Steps

◦ Resize Using Seam Carving
◦ Better Segmentation of the Colors (abstract of the colors)
◦ Figure out Better Ways to apply saliency map to the image – e.g. The parts of little attention go blank
◦ Accelerate Ink Diffusion – It is the slowest part for now
◦ Better Outline Method – try to get smooth and abstract lines
◦ Improve the Color Mapping Method – e.g. Try to do something in LAB / HSV field rather than RGB, or: with manual input, segment the color areas
◦ Try to use the Colors of Water-Ink – in water-ink painting most colors are used directly or blend at most 2 or 3, blended with water & ink, not very colorful
◦ Portrait Improvement – Important
◦ Water-Ink Unique Brushstroke – based on the rules of water-ink painting
◦ Add Paper Texture – mixed gradient blending?
References

- XDoG: An eXtended difference-of-Gaussians compendium including advanced image stylization (Holger Winnem¨oller, Jan Eric Kyprianidis, Sven C. Olsen)
- Attention - The Saliency-Map Model (https://www.tu-chemnitz.de/informatik/KI/scripts/ws0910/Attention_Saliency.pdf)
- Real-Time Image-Based Chinese Ink Painting Rendering (Lixing Dong, Shufang Lu, Xiaogang Jin)
THANK YOU