Texture Synthesis for Material Recognition

Master's Thesis in Articial Intelligence — Intelligent Systems

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1. Introduction
2. Related Work
3. Approach
4. Fundamentals
5. Reflection Models
6. Experiments
7. Conclusion

Material Recognition

Texture Synthesis

Goal of this thesis

Textons & Filter Banks

Multivariate Gaussian Distributions

Minimal Training Images

Photometric Stereo

PhoTex Database

Generation of novel data

Local Reflection

Lambert's Cosine Law

Lambertian

Phong

Blinn-Phong

Cook-Torrance

Oren-Nayar

Two datasets

Experiment A

Experiment B

Results

Conclusion