Anisometric texture synthesis optimization

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1 Research topic

The goal of texture synthesis can be stated as follows [Wei et al., 2009]. Given an input texture sample, synthesize a new output texture that, when perceived by a human observer, appears to be generated by the same underlying process:

Anisometric texture synthesis [Lefebvre and Hoppe, 2006] generalizes texture synthesis to allow local rotation and scaling of the texture according to a Jacobian field:
We are interested in texture optimization methods [Kwatra et al., 2005]. These methods view the texture synthesis as a minimization problem between the input texture sample, and the output texture.

The goal of the master internship is to formulate an effective texture optimization method for anisometric synthesis, and implement it.

2 Requisites

- Strong programming skills (C++, Python and OpenCL).
- Highly proficient in spoken and written English.

References

