

Draft of the tutorial on “Toon Shading”

A. Abstract

Non-photorealistic rendering tries to simulate the styles artists use. It has shown that users and viewers can benefit from this artificial reproduction. By simplification and leaving out mess, one can amplify the effect of information relevant to the presentation. Comic rendering is one of the simplifications. The tutorial will show what comic rendering is and how toon shading can contribute to that perception. We will see how to create that specific effect, what problems evolve and what enhancements could be applied to it. Our setting will be real time rendering and thus the implementation done with OpenGL.

B. Structure, questions to be covered & guiding objectives

1. Introduction & Aim

- What is the background of the tutorial’s topic? → NPR, comic rendering, toon shading
- What is the lesson about? → content, extent, expected results
- Try to interest them!

2. Objectives

- What is the task that the students must undertake? → coding, own experiments to compose new effects
- What prerequisites are required to take the tutorial? → basics in OpenGL
- What are the guiding questions that students need to keep in mind in order to accomplish their task? → convenience of use, real-time operation
- Briefly outline what students are expected to learn!

3. Methods

- Give students directions on their work. → approaches to toon shading
- Explain the process which has to be run. → basic terms and method used, the underlying math

4. Implementation

- How will the (basic) algorithm look like in pseudo code?
- Give details in some specific OpenGL matters. → texture mapping, colour transition

5. Reflection

- What problems and new questions did the issues generate? → general problems with NPR, hardware issues related to OpenGL, drawbacks of colour quantization
- Why would these new questions be important in improving the solution? → enhancements and variations

- **Show probable solutions and give links to further research.** → face sub-division, anti-aliasing, different texture maps (which i.e. generates highlights or double-source lighting), derived style: pencil sketch drawings
6. **Results & Conclusion**
- How will the conclusion offer the opportunity to engage in further analysis? → **make method more expressive: i.e. speed lines, how NPR can benefit to the understanding of complex data**
 - What is the relationship to the others' tutorial and the reviewed SIGGRAPH paper?
 - **Try to motivate the students to go further in implementation and research!**

C. Literature

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