

Project Plan

Thesis: Real-Time Rendering of Translucent Materials with Directional Subsurface Scattering
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Week Number			Planned Activities	Details
week 6	03-02-14	09-02-14	Literature study	Cascaded Light Propagation Volumes [Kaplanyan et. Al.] - studied approach to lattice-based translucency. Also looked at [Børlum et al.] with a possible approach with SSLPV (Subsurface Scattering Light Propagation Volumes)
week 7	10-02-14	16-02-14	Literature study	Numerical validation of the model simulating it on a python-based simulation framework. Started comparison of the studied models in order to decide which one is the best way to go.
week 8	17-02-14	23-02-14	Implementation	Choice of the actual method. Basic implementation on the chosen framework of some auxiliary classes (Materials, Lights, SH calculation routines). Start research on the actual rendering method
week 9	24-02-14	02-03-14	Implementation	Code: Configured debugger, added basic point light/directional light system, refactored the framework to be more general. Started implementing version of Directional Dipole. Works on planes, to test on spheres. Theory: Tried to devise a numerical condition to optimize shader calculations (if distance more than d, discard contribution) Writing: Updated introduction, corrected some mistakes, added references and an image.
week 10	03-03-14	09-03-14	Implementation	Code: Trying to apply the naïve method to spheres and cubes (works but with banding artifact), then extending to general geometry (probably works, but needs testing). Start implementation of conservative rasterization, first step of the method (no time). Writing: Writing summary of related work section, with the most relevant papers outlined. (needs some additions still)

week 11	10-03-14	16-03-14	Implementation	Code: Implemented naïve implementation on CPU with the base Jensen et al. dipole and the Better Dipole by D'Eon et al. directional dipole shows some overshooting Writing: Finishing related work section
week 12	17-03-14	23-03-14	Implementation	Implementing initial part of my method (reasoning how to do that) Writing: Related Works
week 13	24-03-14	30-03-14	Implementation	Basic implementation continuing
week 14	31-03-14	06-04-14	Implementation	Basic implementation continuing
week 15	07-04-14	13-04-14	Implementation	Basic implementation continuing - solving problems related to sampling patterns in textures
week 16	14-04-14	20-04-14	Implementation	Reasoned on different sampling patterns (Easter Holidays)
week 17	21-04-14	27-04-14	Writing	Catching up with writing - Related works and Implementation - trying different sampling patterns
week 18	28-04-14	04-05-14	Implementation	Finished main implementation. Experimented with LOD on mipmaps and different kind of sampling patterns.
week 19	05-05-14	11-05-14	Implementation	Experiment with different sampling patterns. Implementing box filtering with mipmaps
week 20	12-05-14	18-05-14	Validation and optimization	Optimization - low level and engine wise. (Maybe) Extension to point and environment maps.
week 21	19-05-14	25-05-14	Validation and optimization	Timing comparisons with other existing methods.
week 22	26-05-14	01-06-14	Writing	Started final writing of the thesis (reordering notes taken throughout the thesis). Introduction chapters and previous work.
week 23	02-06-14	08-06-14	Writing	Description of our actual method.
week 24	09-06-14	15-06-14	Writing	Results and validation.
week 25	16-06-14	22-06-14	Writing	Results and validation.
week 26	23-06-14	29-06-14	Writing	Reharsal.
week 27	30-06-14	06-07-14	Final Handin week	