

Particle Based Fluids

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Resources

Ritchie Moore. *Cave Troll*. Available from:

<http://nccastaff.bournemouth.ac.uk/jmacey/Renderman/code/Shaders2.tgz>

[Accessed 13 May 2010]

The Cave Troll was used to demonstrate again a melting technique, but with different parameters modifying the overall look of the fluid, as well as the interaction with Rigid Body Dynamics.

SideFX, 2010. Houdini (10.0 – build 528).

SideFX Houdini 10 was the main application used to research Particle Based Fluids. It also allows the integration of this technique with others such as Rigid Body Dynamics.

Stanford University Computer Graphics Laboratory. *Happy Buddha*. Available from:

<http://www.d.umn.edu/~ddunham/cs5721f07/schedule/resources/models/buddha.obj>

[Accessed 12 May 2010]

The Stanford University Happy Buddha model was used to demonstrate the usage of an OBJ file being converted to Particle Based Fluids and then running a simulation to melt the OBJ.

Research References

SideFX, 2008. Houdini Dynamics Tutorials: Introduction to Fluid Dynamics in Houdini. Available from: http://www.sidefx.com/index.php?option=com_content&task=view&id=1301&Itemid=262

[Accessed 22 April 2010].

The SideFX tutorials on Fluid Dynamics were probably the most important reference throughout my research. Some of the examples shown in the final video recreate sample videos produced in these tutorials. These tutorials were crucial to learn how to use the tools but more important than that made me choose Particle Based Fluids instead of Voxel Fluids for several reasons that I will describe in the presentation.

SideFX, 2009. Houdini Dynamics Tutorials: Intro to Pyro FX. Available from:

http://www.sidefx.com/index.php?option=com_content&task=view&id=1284&Itemid=262

[Accessed 23 April 2010].

While trying to decide what was the best type of fluids to research, Particle Based or Voxel, I looked into Pyro FX and this video was very helpful in understanding the concepts behind Pyro.

SideFX, 2009. Houdini Dynamics Tutorials: Learning Pyro FX. Available from: http://www.sidefx.com/index.php?option=com_content&task=view&id=1524&Itemid=262 [Accessed 23 April 2010].

Similar to the previous entry, this was another tutorial seen to further enhance some knowledge in Pyro FX while trying to decide whether the best approach would be Particle Based Fluids or Voxel Fluids.

SideFX, 2010. Houdini 10.0 Help. Available from: <http://www.sidefx.com/docs/houdini10.0/news/10/> [Accessed 22 April – 13 May 2010].

The SideFX Houdini Help pages were essential to understand how the parameters in the simulation work and how I could tweak them to achieve more interesting results. They were accessed constantly throughout this research. Instead of the offline manual, the online one was used since contains more information.

YouTube. 2007. *Realflow 4 Fluid Animation*. Available from: http://www.youtube.com/watch?v=xpUpVQ_jyIU [Accessed 2 May 2010].

This was one of my main references for Particle Based Fluids. It is an animation made in Realflow using this technique and interacting with others such as Rigid Body Dynamics.

Presentation References

The following links are images downloaded to visually aid the presentation. Some of these images were cropped to better fit the slides.

battlewings. 2007. *Orange Splash*. DeviantArt. Available from: <http://battlewings.deviantart.com/art/Orange-Splash-46292191> [11 May 2010].

Chris Chia. 2009. *Houdini 10 Pyro Fluid for Explosion*. Available from: <http://chrischia.info/blog/wp-content/uploads/2009/05/pyro.jpg> [11 May 2010].

Digital Tutors. 2009. *Digital Tutors Realflow Basics*. Available from: http://pixhost.ws/avaxhome/2006-11-10/d_77.jpg [11 May 2010].

fashi. 2005. *Playing With Fire*. DeviantArt. Available from: <http://fahsi.deviantart.com/art/Playing-with-Fire-19363622> [11 May 2010].

firework. 2003. *Water Drop BW*. DeviantArt. Available from: <http://firework.deviantart.com/art/Water-drop-BW-1192734> [11 May 2010].

galdranorn. 2009. *Honey*. DeviantArt. Available from: <http://galdranorn.deviantart.com/art/honey-132392473> [11 May 2010].

=Gest0ert. 2009. *Guitar Splash*. DeviantArt. Available from: <http://gest0ert.deviantart.com/art/Guitar-Splash-118672554> [11 May 2010].

*SilensTemplum. 2004. *Pizza Dough*. DeviantArt. Available from: <http://silenstemplum.deviantart.com/art/Pizza-Dough-157688298> [11 May 2010].

Autodesk Maya Logo. Available from: <http://cpham3.files.wordpress.com/2009/08/autodesk-maya-unlimited-version-2009.jpg> [11 May 2010].

Autodesk SoftImage Logo. Available from: http://gs3dblog.org.ua/wp-content/uploads/2009/10/realflow_4_logo.jpg [11 May 2010].

Blender Logo. Available from: http://www.cise.ufl.edu/~fishwick/blender/BLENDER_LOGO.jpg [11 May 2010].

SideFX Houdini Logo. Available from: http://www.cg9394.com/bbs/attachments/month_1001/10012012552d935991d8ea1cd6.jpg [11 May 2010].

Realflow Logo. Available from: http://gs3dblog.org.ua/wp-content/uploads/2009/10/realflow_4_logo.jpg [11 May 2010].