Personal Inquiry Presentation Fluid and particle simulation shelf tools in Houdini

REFERENCES

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Annotated References

Garcia, J., et al. 2016, November. Rigging the oceans of Disney's Moana. In *SIGGRAPH* ASIA 2016 Technical Briefs (p. 30). ACM

Moana has been an inspiration for me this year and I was really excited to have the chance to study how the Disney managed to deliver such a complicated rig so successfully. The paper describes how they expanded and improved the pipeline in order to face the challenges of rigging a realistic ocean in a movie where the ocean was a prominent asset. it also included the steps they took to face the challenges and establish communication between the different team in order to portray the wide variety of ocean types like open seas, shallow waters, calm seas, stormy wavy seas, lagoons, shoreline and so on. Not only they managed to make the different parts work together in various conditions but also went a step further with the rigging of the ocean and the interaction with the main characters as one of them, giving it a personality.

Seymour, M., 2011. The science of fluid sims [online]. fxguide.com [Accessed on May 2017]

In this online article Mike Seymour goes over the history of fluid simulations in computer graphics and Visual Effects and their basic concepts. It helped me understand the chronological order of the technological progress and the scientific impact on them.

SideFX, Fluids Houdini Documentation. [online] Available from : http://www.sidefx.com/docs/houdini/fluid/_index [Accessed on May 2017]

The Official SideFX page with the Houdini Documentation included description of every Houdini shelf tool and several examples for better understanding. It provided me with the base line for my research and helped me organize my research and select a number of tutorial to implement for practical understanding.

References

Bagar, F., Scherzer, D. and Wimmer, M., 2010. A layered particle-based fluid model for real-time rendering of water. 1383–1389. Available from: http://dl.acm.org/citation.cfm?id=2383636 [Accessed May 2017].

Chentanez, N. and Müller, M., 2011. Real-time Eulerian water simulation using a restricted tall cell grid.ACM Transactions on Graphics (TOG), 30 (4), 82. Available from: http://dl.acm.org/citation.cfm?id=1964977 [Accessed May 2017].

Daniel, B., 2012.Fluid simulations in an independent visual effects pipeline. Available from: https://idea.library.drexel.edu/islandora/object/idea%3A4030 [Accessed May 2017].

Darles, E., Crespin, B., Ghazanfarpour, D., and Gonzato, J.,2010. *A Survey of Ocean Simulation and Rendering Techniques in Computer Graphics* [online]. Available from: http://www.cs.uu.nl/docs/vakken/mssw/papers/STAR/A%20Survey%20of%200cean %20Simulation%20and%20Rendering%20Techniques.pdf [Accessed on May 2017]

Foster, N. and Metaxas, D., 1996. Realistic Animation of Liquids [online]. Available from: http://graphics.stanford.edu/courses/cs468-05-fall/Papers/foster-metaxas-gmip96.pdf [Accessed on May 2017]

Froemling, E., Goktekin, T. and Peachey, D., 2007. Simulating whitewater rapids in Ratatouille. 68. Availablefrom: http://dl.acm.org/citation.cfm?id=1278862 [Accessed on May 2017].

FX HIVE SUITE, 2015 Houdini -waterfall flip fluids Webinar Tutorial. Available from: https://www.youtube.com/watch?v=l2u-DXOxouY [Accessed on May 2017].

FX HIVE SUITE, 2015. Houdini Mantra -waterfall shading. Available from: https://www.youtube.com/watch?v=kGfNT_M060s [Accessed on May 2017].

Tessendorf , J., 2010. *TED- X Talks* [video, online]. Available from: https://www.youtube.com/watch?v=XW2LtGtCbk0 [Accessed on May 2017].