

2012 Alain Fournier Award for the best Canadian Computer Graphics Dissertation

This year, Tyson Brochu is the recipient of the Alain Fournier Ph.D. Dissertation Award. His dissertation, entitled “Dynamic Explicit Surface Meshes and Applications”, made several outstanding theoretical and practical research contributions to computer animation.

The quality of an animation can be significantly affected by the quality of the surfaces it depicts, especially in cases of extreme deformations and topological changes. Tyson has initiated in physics-based animation the use of explicit mesh tracking. He has introduced a framework to guarantee intersection-free surfaces, even in the presence of thin, delicate details and topology changes. Achieving this guarantee requires exact collision detections, and he has provided an approach to find them that is fully robust, parameter-free, and computationally efficient. He has applied explicit mesh tracking to cloth and smoke simulations and in doing so, it introduces two new methods, one for vortex sheet smoke with no needs for volumetric simulation, and the other for adaptive liquid simulation with high-resolution surface tension. All these contributions have appeared in prominent venues.

Tyson completed his B.Sc. with dual majors in Computer Science and Mathematics, with great distinction, at the University of Regina in 2004, followed by his M.Sc. and Ph.D. in Computer Science at the University of British Columbia under the supervision of Professor Robert Bridson.

He has co-authored, among others, two SIGGRAPH papers, one paper in SIAM Journal of Scientific Computing, two papers at the Symposium on Computer Animation. He has co-organized a specialized SIGGRAPH course, and has been reviewer in the top computer graphics conference and journals. His expertise developed during his thesis has lead to contributions to the academy award-winning *Tissue* system at Weta Digital, as well as screen credits for the movies *Thor* and *The Hobbit: An Unexpected Journey*. He is now a developer at Pocket Pixels in Vancouver.

The “Alain Fournier Memorial Fund” was created to celebrate Alain’s life, to commemorate his accomplishments, and to honour his memory. It rewards an exceptional computer graphics Ph.D. dissertation defended in a Canadian University over the previous year. The winning dissertation is selected through a juried process by a selection committee consisting of accomplished researchers in computer graphics.

For more information about the “Alain Fournier Memorial Fund”, and information about donation, please visit <http://www.cs.ubc.ca/~fournier>

Previous Award Recipients

2011 Gordon Wetzstein
2010 Stelian Coros
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