

Cyril Delalandre,
Research engineer in computer graphics and real time rendering



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Current situation

PhD student in computer graphics

INRIA/IRISA / *Technicolor Research & Innovation, Rennes, France*
"Real time rendering of natural environments"

Education

- 2009 **Master Degree in computer science, computer graphics and image processing**
Université de Rennes 1, Rennes, France
- 2005 **Undergraduate (DEUG MIA5) in mathematics and computer science.**
Université de Rennes 1, Rennes, France

Work experience

Nov 2009-Nov 2012 **Research engineer / PhD Student in computer graphics**
Technicolor Research & Innovation, Rennes, France
INRIA/IRISA, Rennes, France

- ✓ Development of real time rendering algorithms using graphics hardware under the supervision of Pascal Gautron and Kadi Bouatouch.
- ✓ Definition of a real time algorithm which compute single scattering in heterogeneous participating media lit by a point light [1,2] or environment light [5], using functional analysis and Fourier space projection. Generalization of the algorithm to handle any volume representation [3] (Voxels, particles, etc...). Definition of an out-of-core solution to render large volume datasets [4]. Integration within the in-house mixed reality platform.
- ✓ Close collaboration with The Moving Picture Company to assist the implementation of our algorithms to the production pipeline for visual effects of movies.
- ✓ Integration and development of several plugins such as 3D file format texture, advanced OpenGL features, etc... for the in-house mixed reality platform.
- ✓ Research results published at international conferences: Siggraph [1], I3D [2], Siggraph Asia [3]. Write up of various report, patent application in English.
- ✓ Reviewer for Siggraph Asia 2011 and Computer Graphics Forum

Nov 2009-Dec 2009 **Visiting Researcher**
Scientific Computing and Imaging Institute, Salt Lake City, Utah, United States

- ✓ Research works in volume rendering under the supervision of Chuck Hansen, in the framework of the associate team between INRIA/IRISA and the University of Utah.

Mar 2009-Sep 2009

Internship in computer graphics

Technicolor Research department, Rennes, France

- ✓ Integration of advanced OpenGL features within the in-house mixed reality platform
- ✓ Development of a X3D/VRML Exporter for 3DSMax in Maxscript.
- ✓ Initial research on volume rendering techniques

Jun 2008-Sep 2009

Internship in computer graphics

Artefacto, Rennes, France

- ✓ Development of an out-of-core landscape rendering system using Ogre3D engine
- ✓ Development of 3DSMax tools in Maxscript.

Skills

- ✓ Strong knowledge in computer graphics especially in real-time & volume rendering.
- ✓ Programming:
 - Standalone and integrated development
 - C/C++: 5 years
 - Java: 2 years
 - Scripting: JavaScript, Maxscript, Python, Mel
 - Web: PHP, HTML, Django, MySQL
- ✓ Graphics programming:
 - OpenGL/DirectX
 - GPU language (GLSL, CUDA, OpenCL)
 - X3D/ VRML Scene graph
 - Ogre3D
- ✓ Softwares:
 - CAD: 3DSMax, Maya, Blender
 - Math: Matlab, Mathematica
 - Dev: Visual Studio, Eclipse, CMake
 - Source Control: SVN, ClearCase, Git
 - Photo/Video: Photoshop, Premiere
- ✓ Languages:
 - French: Native
 - English: Fluent, presentations in English since 2009, One month in Utah
 - German: Basic

Publications

- [3] P. Gautron, C. Delalandre, J-E Marvie, *"Extinction transmittance maps"*, Siggraph Asia 2011 Talks
 - [2] C. Delalandre, P. Gautron, J-E Marvie, G. François, *"Transmittance function mapping"*, proceedings of I3D 2011
 - [1] C. Delalandre, P. Gautron, J-E Marvie, Guillaume François, *"Single scattering in heterogeneous media"*, Siggraph 2010 Talks
 - [4] Papers under submission
 - [5] Papers under submission
- 7 patent filing

Miscellaneous

Guitar, Badminton, Reading