Mario Ausseloos

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`Nationality:` Belgian

- PERSONAL PROFILE

A highly-motivated and hard-working individual, seeking a challenging and rewarding R&D position in the computer animation sector. I have proven success as a researcher and my strong background in mathematics, physics, computer science and computer animation makes me have the skills necessary to maximise my working performance.

- EDUCATION AND QUALIFICATIONS

2005 - 2006   **NCCA, Bournemouth University, United Kingdom**
               MSc Computer Animation [graduation: September 2006]
               [Postgraduate in Computer Animation (81%)]

This course organised at the UK's only Centre for Excellence in Media Practice, provides problem-solving and technical skills combined with artistic sensibilities needed for a successful career as a Technical Director within the computer animation and computer games sectors.

`Modules studied include:` Computer Graphics Fundamentals, Programming for Graphics, Computer Animation Principles & Practice, Film-Making Techniques, Visual Theory & Practice, and several Animation Projects. (All modules were rewarded a distinction.)

`Group Project:` The collaboration with students on the MA 3D Computer Animation and MA Digital Effects courses provides a realistic setting to discover what it is like working with other creative people and working to a strict timescale.

`Master Project:` Design and implementation of a C++ library from scratch to create 3D liquid simulations. This work involves implementing the MAC method (Harlow & Welch, 1965), a Semi-Lagrangian method (Stam, 1999), the Particle Level Set method (Enright et al., 2002), a marching tetrahedra algorithm (Payne and Toga, 1990), and several numerical solvers such as Runge Kutta, SOR and conjugate gradient. Both OpenGL and Renderman were used for rendering.

`Software and languages used throughout the course:` C++, OpenGL, Renderman, Linux Development Environment, Maya, Houdini, and Shake.

2001-2005   **Catholic University of Leuven, Belgium**
              Doctor in Sciences (PhD): Mathematics

The doctoral training involved teamwork, giving presentations at national and international conferences, teaching mathematics to undergraduate students (I got nominated for the best teaching assistant award), supervising two Master projects, and a one-month visit at the University of Luik, Belgium to gain expertise in the mathematical modelling of stellar interiors.

`Research Project:` Analyzing the physical properties of massive pulsating stars by means of constructing mathematical models of their interior structure. I was (co-)author of nine international publications, four of which were written by myself. These publications may be downloaded from *http://www.ster.kuleuven.be/staff/mario/index_en.html*.

`Software and languages used:` C++, Linux Development Environment, and Perl.

2002-2004 **University Centre of Limburg, Belgium**
Postgraduate in Computer Science Technology (86.4%)
[*concurrent with PhD studies*]

This course was organised at weekends to provide higher-educated people with the computer science framework they often need in their profession and to improve their employability.

`Modules studied include:` Computer Graphics, Introduction to C, Object-Oriented Programming (using C++), Algorithms and Data Structures, Multimedia- and Communication Technology, Parallel Programming and Computer Networks, Virtual Reality, File Organization and Databases, and Artificial Intelligence. (All modules were rewarded a distinction.)

`Research Project:` An in-depth study of global illumination algorithms including the mathematical framework, ray-tracing and radiosity methods, hybrid methods such as the Photon Mapping method, and several optimizing strategies.

`Thesis:` Implementation of ray tracing (Whitted, 1980), stochastic ray tracing and the Photon Mapping method (Jensen, 1995) using C++ and OpenGL. This work involved implementing Monte Carlo integration, density estimation methods and anti-aliasing techniques.

`Software and languages used throughout the course:` C, C++, OpenGL, Prolog, VRML, SQL, XML, and SAS.

1997-2001 **Catholic University of Leuven, Belgium**
BSc & MSc Mathematics (80.3%)

Course work in Mathematics (including Numerical Mathematics, Linear Algebra and Matrices, Differential Equations, Geometry, Logic, Analysis, and Probability Theory), Physics and Programming (Pascal, Maple and Matlab).

- OTHER INFORMATION

`Language skills:` Dutch (native), English (fluent), French (basic).

`Hobbies:` I regularly go to the cinema, being a fan of special effects and animation films. I like to keep fit by working out at the gym several times a week and I enjoy cooking for my friends.

- REFEREES

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