Marc J. Ouellette

Curriculum Vitae

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Professional Experience

Alias | Wavefront, Toronto, Ontario

December 1993 to November 1996 — Worked part-time with the rendering team, designing and implementing efficient texture filtering in screen space, texture caching and texture compression schemes. The implementation was done in C for PowerAnimator, and in C++ for Maya.

Department of Computer Science, University of Toronto, Toronto, Ontario

September 1987 to May 1995 — Employed as teaching assistant for a variety of computer science courses in the following areas: computer graphics, numerical analysis, discrete mathematics, scientific and symbolic computing. Languages used in courses included C, Maple, and FORTRAN-77.

Watcom Systems, Waterloo, Ontario

May 1989 to August 1989 — Worked on the design and C implementation of a COBOL compiler for the IBM PC, including a compact and efficient keyword parser.

Watcom Systems, Waterloo, Ontario

Sep. - Dec. 1986
Jan. -Apr. 1986
May - Aug. 1985 — Employed three work terms at Watcom as part of the University of Waterloo's CO-OP program. Worked on the implementation (in WSL) of WATFOR-77, a FORTRAN 77 compiler, in a VAX/VMS environment, focusing on code generation, error handling, and floating point optimizations.

Education

University of Toronto, Toronto, Ontario

September 1989 to Fall 2000 (expected) — Doctor of Philosophy, title of thesis "Numerical Methods for Illumination Integrals", under the supervision of Professor Eugene Fiume. The focus of my Ph.D. research was on the design and implementation of efficient numerical methods for the solution of illumination integrals. Recipient of NSERC and OGS Scholarships, and an NSERC top-up award.

University of Toronto, Toronto, Ontario

September 1987 to October 1989 — Master of Science, title of thesis "Modelling Light Propagation and Global Illumination". The algorithm developed was based on modelling the propagation of light in an adaptively subdivided environment. Recipient of University of Toronto Open and NSERC Scholarships.

University of Waterloo, Waterloo, Ontario

September 1982 to April 1987 — Joint Honours Bachelor of Mathematics in Computer Science and Pure Mathematics. Graduated on Dean's Honour List, with a 92.6% average. Recipient of a Sir Isaac Newton Scholarship, and Descartes Fellowships.

Publications

1. Ouellette, M.J., Fiume, E., "On Numerical Solutions to One Dimensional Integration Problems in Computer Graphics", *submitted for publication*, 52 pages.
2. Ouellette, M.J., Fiume, E., "Approximating the Location of Integrand Discontinuities for Penumbral Illumination with Area Light Sources", *Eurographics Workshop on Rendering*, June 1999, pp. 213–224.
3. Ouellette, M.J., Fiume, E., "Approximating the Location of Integrand Discontinuities for Penumbral Illumination with Linear Light Sources", *Graphics Interface*, June 1999, pp. 65–74.
4. Woo, A., Pearce, A., Ouellette, M., "It's Really Not a Rendering Bug, You See...", *IEEE Computer Graphics and Applications*, Volume 16, Number 5, September 1996, pp. 21–25.
5. Fiume, E., Ouellette, M., "On Distributed, Probabilistic Algorithms for Computer Graphics", *Graphics Interface*, June 1989, pp. 211–218.
6. Ouellette, M., "Modelling Light Propagation and Global Illumination", Master's thesis, Department of Computer Science, University of Toronto, Toronto, Ontario. 1989.

Additional Programming Experience

- Design, implementation, and support of a three dimensional graphics package, for both local and global illumination. This work included a modeller and ray-casting based renderer, extensive documentation within the code, and an object manipulation interface for an SGI workstation. This project, consisting of over 55 000 lines of C code, was developed as part of my Ph.D. research.
- Created a statistical package for collecting and manipulating data relating to hockey. Involved the design of efficient data structures, for storing and retrieving data, and routines for calculating various statistics, and producing reports for coaching staff, media, and web site.

Language Skills

Fluent in both French and English.

Interests and Activities

Avid supporter of women's ice hockey, serving as statistician, webmaster (see *www.whockey.com/nwhl*), registrar, and Officer for the National Women's Hockey League (NWHL) from 1992 to 2000. Currently the statistician for the Mississauga Ice Bears of the NWHL. Also enjoy hockey, broomball, hackey sack, urban peasant style cooking, and oenology.