

Michael B. Johnson

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Education

Massachusetts Institute of Technology – Media Laboratory, 9/88 to present

M.S. (Visual Studies) received February 1991. Expected graduation date is early 1995 with a Ph.D. in Media Arts & Sciences (Computer Graphics & Animation). Thesis committee is Dr. David Zeltzer, MIT Professor Pattie Maes, and Dr. Ed Catmull (President of Pixar). Research topics include: development and design environments for malleable media, autonomous animation, simulation of adaptive behavior, virtual environments, scientific visualization, parallel and distributed algorithms, interfaces for wide area parallel systems.

University of Illinois, Urbana-Champaign – College of Engineering, 8/83 to 5/88

B.S. in Computer Science, College of Engineering. Participated in the International Study Abroad Program and the Cooperative Work-Education Program, theater, and the $\Delta\Sigma\phi$ social fraternity.

University College of Swansea, Wales, U.K., 1/86 to 6/86

Exchange Student. Completed courses in: Artificial Intelligence, Computer Graphics, War & Society, Honors Independent Study Project, bicycled across Ireland during Easter break.

Some Relevant Experience

MIT Media Laboratory, 9/88 to present (excluding summers of 89, 90, 91, 92, 93)

Graduate Research Assistant, Computer Graphics & Animation Group. Currently developing an object oriented framework for doing collaborative animation. Designed and implemented a distributed action selection network for the control of autonomous animated characters. Designed a network transparent parallel development environment for building autonomous animations. Designed and implemented a simulated multi-plane camera. Contributed significantly to the production of a 7 minute computer graphics film, "Grinning Evil Death". *50 to 80 hours per week*

Pixar, 6/93 to 9/93

Summer Intern, Pixar Technology Group. Worked on the IceMan image computing environment, added TIFF output support to it, explored various UI paradigms for quickly prototyping IceMan applications. Wrote a complete RenderMan parser, wrote a large set of objects to deal with RenderMan shapes and shaders in a heterogenous, networked environment. *70 hours per week*

Thinking Machines Corporation, 1/91 to 1/93

Future technologies consultant. Made recommendations to the Director of Advanced Software concerning future software technology. Negotiated with vendors to port their software to the CM-5, and helped in the porting process. *10 to 40 hours per week*

Thinking Machines Corporation, 5/89 to 9/89, 5/90 to 9/90

Graphics Programmer, Scientific Visualization Group. Designed and implemented libraries and code examples, as well as several actual applications, for distributing simulation and visualization among a Connection Machine-2 system and any of several graphics workstations including a SGI 4D/240GTX and a Stardent Titan. Contributed significantly to the design and implementation of an interactive volumetric visualization tool running on a Connection Machine-2 system, with the user interface and output using X11. *40 to 70 hours per week*

National Center for Supercomputing Applications, 1/87 to 8/88

Graphics Programmer, Scientific Visualization Program. Rendered stills and animation sequences on a Cray X-MP/48 & Alliant FX-80, designed and implemented various software tools for use by other members of the Scientific Visualization Program and NCSA scientists. *30 to 50 hours per week*

IBM Cambridge Scientific Center, 6/86 to 1/87

Formal co-op. Assisted with the design and implementation of an experimental, high performance network control unit. Used IBM VM/370 CAD equipment extensively. *40 hours per week*

IBM Telecommunication Products Organization, 1/85 to 9/85

Formal co-op. Responsible for testing a major engineering change to the PC Network Card. Designed, implemented and fully documented (500+ pages) a test plan which cut the testing from a 3 person, 3 week task, down to a 1 person, 3 day task. *60 hours per week*

Technical Knowledge

Software Environments:
UNIX (4.3BSD & Sys V)
NEXTSTEP
RenderMan
AVS

Software Languages:
fluent in C, C*, Obj-C, tcl
conversant in others

Hardware:
TMC CM-2 & 5, NeXT, SGI,
HP, DEC, SUN

Relevant Papers & Awards

Johnson, M.B. and D. Zeltzer, *Modelling Malleable Media in WavesWorld*, IEEE Conference on Dual Use Technologies, 1994.

Zeltzer, D. and M.B. Johnson, *Virtual Actors and Virtual Environments: Defining, Modeling and Reasoning about Motor Skills*, in "Interacting with Virtual Environments", L. MacDonald and J. Vince, 1993, John Wiley & Sons: Chichester, England.

SIGGRAPH 1990 Juried Film & Video Show, 1990 Blenheim Film Festival, 1st place (student division) & Critics' Choice, MTV's Liquid Television, *Grinning Evil Death* animation, contributor

SIGGRAPH 1989 Juried Art Show, SIGGRAPH 1990 Traveling Art Show (U.S., Spain, Australia, Moscow), *Views from Below: on the Eye of the Storm*, computed stereo pair, artist

Zeltzer, D. and M.B. Johnson, *Motor Planning: Specifying and Controlling the Behavior of Autonomous Animated Agents*. Journal of Visualization and Computer Animation, April—June 1991, 2(2), pp. 74-80.

Apple Computer 1987 Paper Contest, semi-finalist, *Design the Personal computer of the Year 2000*, co-author

National Merit 1983-88 Academic Scholarship