

JOSHUA A. GRANT

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OBJECTIVE

A software engineering position with a visual effects company developing tools and applications for rendering.

INTERESTS

Visual Effects, Ray Tracing, Global Illumination, Radiosity, Scientific Visualization, 3D Animation, Application Development

SKILLS

Languages C++, C, Java, Perl, IDL, Objective C/C++, Ada, MIPS Assembly, FORTRAN
API's Open Inventor, OpenGL, X-Motif, Qt, Cocoa
Web HTML, CGI, JavaScript, VRML
OS's Unix/X (Irix, Linux, SunOS), Macintosh, Windows
Apps Amira, Photoshop, Illustrator, Dreamweaver, MS Office

WORK EXPERIENCE

Center for Ocean-Atmospheric Prediction Studies, Tallahassee, Florida
Computer Graphics Programmer, February 1999 – Present

Developed a tool based on my Master's thesis for studying 3D ocean flow using Open Inventor. Designed web pages using HTML Adobe Photoshop and Illustrator, wrote CGI scripts using Perl, and created 2D/3D animations using OpenGL, Open Inventor, and IDL. Developed research related software using X-Motif, C/C++, and IDL. Optimized existing computer code in IDL and C++, and helped co-workers with programming questions.

PUBLICATIONS

Josh Grant, Gordon Erlebacher, and James O'Brien, Visualizing Ocean Flow using Lagrangian-Eulerian Time Surfaces. *IEEE Visualization 2002* (in press).

EDUCATION

M.S. Computer Science, Florida State University, Graduated: August 2002
B.S. Computer Science, Florida State University, GPA: 3.41
B.S. Meteorology, Florida State University, GPA: 3.00
Graduated: April 2000

Computer Science: Software Engineering, Photo-Realistic Computer Graphics, Scientific Visualization, Computer Graphics, Operating Systems, Programming Languages, Theory of Computation, Digital Networks, Databases, Computer Organization, Assembly Language

Meteorology: Synoptic Meteorology, Atmospheric Dynamics, Atmospheric Physics, Climatology

Mathematics: Calculus I-III, Discrete, Differential Equations, Probability

PROJECTS

Master's Thesis: <http://www.cs.fsu.edu/~grant/projects/mthesis/>

The Lagrangian-Eulerian Advection (LEA) algorithm is extended to take the vertical motion of a 3D velocity field into account and make it more visible to the user.

Oceanographers used the tool to study the vertical motion variations found in ocean fronts and eddies.

IVTrace: <http://www.ivtrace.org/>

An API for creating photo realistic images based on an Open Inventor scene. It provides an interface to create a scan-line ray tracer and an interactive 3D ray traced / globally illuminated scene.

3D Grapher: <http://www.cs.fsu.edu/~grant/projects/3dgrapher/>

An interactive tool for graphing three dimensional analytic functions. A perfect example of how easily applications can be built by subclassing the Open Inventor libraries.

Marching Cubes: <http://www.cs.fsu.edu/~grant/projects/mcubes/>

A subclass of the Open Inventor SoEngine class for generating isosurfaces from a given scalar field. The engine provides an interface to easily create isosurfaces using Open Inventor.

HONORS AND AWARDS

Dean's List

3rd Place at FSU ACM Programming Contest, Spring 2000

1st Place at FSU ACM Programming Contest, Fall 2000

Represented FSU in 2000 ACM Southeastern Regional Programming Contest

2nd Place at FSU ACM Programming Contest, Fall 2001

Represented FSU in 2001 ACM Southeastern Regional Programming Contest

MEMBERSHIPS

Golden Key National Honor Society

Association for Computing Machinery

Upsilon Pi Epsilon

REFERENCES

Dr. James J. O'Brien

Director

Center for Ocean-Atmospheric

Prediction Studies

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Dr. Mark A. Bourassa

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