

## PHILIP M. SUTTON

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### Objective

A position as a researcher and software developer that utilizes my expertise in scientific visualization and computer graphics.

### Summary

Graduate student in Computer Science, specializing in visualization of dynamic simulation and measurement data. Experience with ray tracing and photorealistic rendering, volumetric data visualization, and parallel algorithms. Skilled at developing software within large, existing computational frameworks. Seeking a challenging position creating and working with new technology.

### Skills and Accomplishments

- Created and implemented an algorithm to extract isosurfaces from time-varying volumetric data. Technique demonstrates up to eight times speedup over previous methods, and consumes less memory than other dynamic techniques.
- Implemented a ray tracer, incorporating a bounding box hierarchy, anti-aliasing, texture mapping, and lens effects.
- Extensive programming experience under the SCIRun Problem Solving Environment, an existing infrastructure providing computational steering and interactive visualization.
- Programming experience in C, C++, Java, Perl, C-Shell, HTML, Tcl-Tk. Experience with UNIX, MacOS, Windows NT.

### Education

<b>Master of Science</b> (expected December 1999) 1997–Present Computer Science major (GPA 3.9)	<b>University of Utah</b>
<b>Bachelor of Science</b> 1993–1997 Engineering and Applied Science major (GPA 3.5)	<b>Caltech</b>

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## Experience

### Research Assistant

University of Utah

September 1998–Present

Compared methods for three dimensional isosurface extraction in scalar fields. Designed and implemented the Temporal Branch-on-Need tree algorithm for isosurface extraction in time-varying fields.

### Research Assistant

Salt Lake City, UT

January 1998–June 1998

Extended the SCIRun problem solving environment by including modules for the visualization of Computational Fluid Dynamics Fluid Implicit Particle (FLIP) data. Included support for two- and three-dimensional scalar fields, vector fields, and particle sets.

### Undergraduate Researcher

Caltech

1995–1996

Developed and implemented a new ray tracing algorithm that allows any existing ray tracer to render fur and other microsurface-based textures, such as trees, clouds, and flowers.

## Awards

NSF Graduate Traineeship

Graduation with Honors, Caltech

## Professional Affiliations

ACM Student Member

Utah SIGGRAPH Chapter

## Publications

Philip Sutton and Charles D. Hansen. “Isosurface Extraction in Time-varying Fields Using a Temporal Branch-on-Need Tree (T-BON).” *Proceedings of IEEE Visualization 1999*.