

Philip Shilane

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EDUCATION

My research focused on analyzing large data sets to improve retrieval accuracy and performance.

Dissertation: Shape Distinction for 3D Object Retrieval

Ph.D., Computer Science, Princeton University. March 2008.

Master of Arts, Computer Science, Princeton University. November 2004.

Master of Science, Computer Science, Stanford University. June 2001.

Bachelor of Science, Computer Science, Stanford University. June 2000.

WORK EXPERIENCE:

Software Engineer, Research and Development Lab of Data Domain, Princeton, NJ, April 2007 – present. My work has focused on future oriented projects to improve compression, throughput, and capacity of multi-petabyte backup storage systems. Projects have included identity and similarity based compression, network transfer of compressed data, cluster storage, and local compression algorithms. My development work has been in C on Linux. Supervisor: Hugo Patterson, Ph.D. (Chief Technology Officer)

Artificial Intelligence Software Engineer, Stottler Henke Associates Inc., San Mateo CA, 2001-2002. My projects included developing a tool for NASA that assists in scheduling assembly of the space shuttle and an application for tracking aircraft carrier radar information for the Navy to perform threat assessment. My development work was in C++ and Java on Windows. Supervisor: Richard Stottler (President).

RESEARCH EXPERIENCE:

Doctoral Research, Princeton University, 6/03-present.

Explored and developed an importance measure for the surface of 3D shapes called shape distinction that involves an analysis of classified databases and compared to likelihood models. Shape distinction improves shape-matching and is useful for applications such as icon generation and shape simplification. Other projects include analyzing the symmetry of 3D shapes, improvements to shape-matching techniques, and creation of the Princeton Shape Benchmark for testing shape-matching algorithms. Advisor: Dr. Thomas Funkhouser.

Summer Intern, Computer Vision Lab, Sarnoff Corporation, Princeton NJ 6/04-10/04.

Designed and implemented software to recognize partial 3D scans of military and civilian vehicles in a database of for a Phase III DARPA program. Supervisor: Dr. Harpreet Sawhney

SELECTED PUBLICATIONS:

Philip Shilane. Shape Distinction for 3D Object Retrieval. Ph.D. Dissertation, Princeton University, April 2008.

Philip Shilane and Thomas Funkhouser. Distinctive Regions of 3D Surfaces. ACM Transactions on Graphics, Vol. 26, number 2, June 2007.

Philip Shilane and Thomas Funkhouser. [Selecting Distinctive 3D Shape Descriptors for Similarity Retrieval](#). Shape Modeling International, Matsushima, Japan, June 2006.

Thomas Funkhouser and Philip Shilane. Partial Matching of 3D Shapes with Priority-Driven Search. Symposium on Geometry Processing, Sardinia, Italy, July 2006.

Joshua Podolak, Philip Shilane, Aleksey Golovinskiy, Szymon Rusinkiewicz, and Thomas Funkhouser. [A Planar-Reflective Symmetry Transform for 3D Shapes](#). ACM Transactions on Graphics (SIGGRAPH 2006), Boston MA, August 2006.

Thomas Funkhouser, Michael Kazhdan, Patrick Min, and Philip Shilane. [Shape-based Retrieval and Analysis of 3D Models](#). Communications of the ACM. 48(6):58-64, June 2005.

Philip Shilane, Patrick Min, Michael Kazhdan, and Thomas Funkhouser. The Princeton Shape Benchmark. Shape Modeling International, Genoa Italy, June 2004.

Thomas Funkhouser, Michael Kazhdan, Philip Shilane, Patrick Min, William Kiefer, Ayellet Tal, Szymon Rusinkiewicz, and David Dobkin. Modeling by Example. ACM Transactions on Graphics (SIGGRAPH 2004), Los Angeles, CA, August 2004.

HONORS and AWARDS:

Program in Integrative Information, Computer and Application Sciences Fellowship, Princeton University, 2005-2007.

Departmental Fellowship Award, Princeton University, 2002-2003.

Stanford President's Scholar, Stanford University, 1996-2000.

National Merit Scholarship, Stanford University, 1996-1997.

SERVICE:

Vice-President and Treasurer of the Graduate Engineering Council representing graduate students in the School of Engineering and organizing graduate student activities, Princeton University, 2005-2007.

Paper Reviewer for: SIGGRAPH, Eurographics, Shape Modeling International, Multimedia Systems Journal, The Visual Computer, Journal of Computer Aided Design, IEEE Transactions on Multimedia, European Journal on Applied Signal Processing, Computer Graphics Forum, and Multimedia Technologies and Services Symposium.