

COREY TOLER-FRANKLIN

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EDUCATION

- Princeton University, Computer Science Department** 2011
Ph.D., Computer Science
Research Areas: Computer Graphics and Computer Vision
Topics: Acquisition and analysis of the shape and appearance of real-world objects. Algorithms for processing and visualizing complex datasets including matching and non- photorealistic rendering.
Thesis: *Matching, Visualizing and Archiving Cultural Heritage Artifacts Using Multi-Channel Images*
Teaching: COS 126 General Computer Science, COS 226 Algorithms and Data Structures
Advisor: Dr. Szymon Rusinkiewicz
- Cornell University, Program of Computer Graphics** 1999
M.S., Architecture, Major: Computer Graphics
Research Areas: Conceptual modeling tools for architectural design
Topics: Developed a visualization system to teach the mathematical concepts behind projective geometry. Introduced software and novel digital rear-projected display systems to architecture students at Cornell.
Thesis: *A Computer-Based Approach for Teaching Architectural Drawing*
Teaching: Exposed architecture students to computer graphics in a novel design studio.
Advisor: Dr. Donald Greenberg
- Cornell University, College of Architecture, Art and Planning** 1997
B.Arch (Class Rank 4 out of 21)
Thesis: *On Site Museum of Oral History, Nassau, Bahamas*
- Cornell Abroad:** Studied significant architectural works and cultures in Italy, Africa and Malta 1995

PROFESSIONAL EXPERIENCE

- Yale University, Computer Science Department, New Haven CT** July 2011 - present
Yale Postdoctoral Fellow
Working with Professor Holly Rushmeier
- Adobe Systems, Advanced Technology Labs, San Jose, CA** Summer 2007
Computer Vision Group –Developed system for creating computer-generated mosaics.
- Google Inc., Boulder, Colorado** Summer 2006
Google SketchUp Team – Developed prototype for controlling line density in SketchUp models.
- Autodesk Inc., San Francisco, CA** March 2000 – March 2004
Software Engineer – 3D Graphics Team
Developed and enhanced AutoCAD 3D Graphics System to improve performance and functionality; implemented 3D navigation, rendering, and presentation tools; developed API's for 3rd party developers; provided bug-fixes to complex legacy code in a large code base; wrote Technical Research Documents for proposed projects; owned several projects and oversaw the formal development process until delivery; notable contributions to AutoCAD 2002, 2004 and 2005 include: 3D Graphics Configuration, True Color Support, Shaded Viewport Plotting, 3D Navigation Tools, Microsoft Windows Logo Certification, and Sheet Set Management; maintained high company visibility while interacting with cross functional groups such as Test Development and Product Design.
- Special Project - Strategic Accounts:*
Lead pilot project between Autodesk and two international architecture firms - HOK and Gensler; worked in HOK and Gensler offices learning firm processes and providing technical advice on product implementation; reported to Autodesk executives through written reports and presentations to broaden knowledge of the customer process, improve solutions and strengthen customer relationships.
- Hawley Peterson & Snyder Architects, Mountain View, CA** April 2004 – May 2005
Lead the initiative to integrate new Building Information Modeling Technology (BIM) into the architectural design process; represented firm in collaborative Design-Assist project to estimate construction time and cost; projects: Camino Medical Group Campus, Palo Alto Medical Facility.

SKILLS

Languages: C/C++, Java, OpenGL, Open Inventor, Pascal, VBA, HTML, Java Script, Python, Perl
Software: Advanced 3D Studio Max, Revit, AutoCAD, Adobe Illustrator/Photoshop

AWARDS

Google Anita Borg Scholarship for Women in Computer Science: Finalist	2009
National Science Foundation (NSF) Graduate Research Fellowship	2005-2008
Presidential Fellowship, Princeton University	2005-2009
Merit Award, Princeton University	2005-2009
Autodesk 2002 Software Developer Award: Recognized for contribution to AutoCAD	2002
Shreve Award: MS Thesis Project - For excellence and originality	1999
Robert James Eidlitz Traveling Fellowship: Funded For Computer Graphics Studies	1998
The Eschweiler Prize: Recognized for outstanding academic accomplishments	1997

PEER-REVIEWED PUBLICATIONS

Learning How to Match Fresco Fragments

Thomas Funkhouser, Hijung Shin, Corey Toler-Franklin, Antonio Garcia Castaneda, Benedict Brown, David Dobkin, Szymon Rusinkiewicz, Tim Weyrich.

Eurographics 2011 Special Area Track on Cultural Heritage, Llandudno, UK, April 2011

Multi-Feature Matching of Fresco Fragments

Corey Toler-Franklin, Benedict Brown, Tim Weyrich, Thomas Funkhouser, Szymon Rusinkiewicz.

ACM Transactions on Graphics (Proc. SIGGRAPH Asia), Seoul, Korea, December 2010.

A System for High-Volume Acquisition and Matching of Fresco Fragments: Reassembling Thera Wall

Paintings: Benedict Brown, Corey Toler-Franklin, Diego Nehab, Michael Burns, Andreas Vlachopoulos, Christos Doumas, David Dobkin, Szymon Rusinkiewicz, Tim Weyrich.

ACM Transactions on Graphics (Proc. SIGGRAPH), Los Angeles, CA, August, 2008.

Illustration of Complex Real-World Objects using Images with Normals.

Corey Toler-Franklin, Adam Finkelstein, and Szymon Rusinkiewicz.

International Symposium on Non-Photorealistic Animation and Rendering (NPAR) San Diego, CA, August 2007

TEXTBOOKS

To Appear in: Blackwell Companions to Anthropology: A Companion to Rock Art

Chapter 14: Rock art as digital heritage: advances in photo enhancement technology and digital archiving

Ruth Tringham, Michael Ashley and Cinzia Perlingieri (University of California, Berkeley), Liam Brady

(University of Western Australia), Mark Mudge, Tommy Noble, Neffra Matthews, Szymon Rusinkiewicz, Corey

Toler-Franklin and Carla Schroer (Cultural Heritage Imaging, Princeton University), Wiley Publishing 2012.

COURSES/TUTORIALS

Principles and Practices of Robust, Photography-based Digital Imaging Techniques for

Museums: Co-presented full day course.

Presented acquisition and rendering algorithms for museum conservation.

VAST 11th International Symposium on Virtual Reality, Archaeology and Cultural Heritage

(Proc. EUROGRAPHICS 2010), Palais du Louvre, Paris, France, September 2010.

INVITED TALKS/WORKSHOPS

Computer Graphics and Computer Vision Techniques for Preserving Artifacts

University of California Berkeley, October 2011

A Matching System for Reassembling the Thera Frescos

Presented a summer workshop on hardware and software systems being developed to help archeologist reconstruct the Thera Frescos, in an ongoing collaboration with researchers from Princeton University, University College London and Katholieke Universiteit Leuven, along with archaeologists from the Akrotiri Excavation and the University of Ioannina. Santorini, Greece, July 2009, July 2010, July 2011

RTISAD Oxford Workshop: Digital Transformations: New developments in cultural heritage imaging

Presented a session on future directions for computer science research for 3D capture and digital imaging

University of Oxford, Oxford, United Kingdom, February 2011

Applied Math/Image Processing Seminar: Pattern Matching Algorithms and Reassembly Systems

University of California Los Angeles, Los Angeles, CA, January 2011

Technical Talk: Computer Graphics for Cultural Heritage Preservation

Hewlett Packard Laboratories Palo Alto, CA, CA January 2011

Technical Talk: Techniques for Digitizing and Visualizing Artifacts

University of Southern California, Los Angeles CA January 2011

Colloquium Talk: Munsell Color Science Laboratory, Center for Imaging Science

Rochester Institute of Technology, Rochester, NY, October 2010

Generating Scientific Illustrations using Non-Photorealistic Rendering

Introduced fundamental concepts for generating technical illustrations for cultural heritage applications. The Museum of Modern Art (MoMA) Conservation Department, New York, New York, July 2010.

Non-Photorealistic Illustration using RGBN Images

Adobe Systems, Inc., San Jose, CA, August 2007.

Google Tech Talk: A Prototype for Controlling Line Density in 3D Models

Google Inc., Boulder Colorado, August 2006.

CONFERENCE COMMITTEES

Eurographics International Scientific Committee

International Symposium on Virtual Reality, Archaeology and Cultural Heritage, VAST 2011

PROFESSIONAL AFFILIATIONS

Association for Computing Machinery (ACM)

European Association for Computer Graphics (EG)

American Institute of Architects (AIA)

National Organization of Minority Architects (NOMA)

SERVICE AND OUTREACH

Wesley L. Harris Scientific Society, Princeton, University

Women in Science and Engineering at Princeton Focus Group

Autodesk Design Your Future Program for Women in Science and Technology (2000 – 2004)