

DR. 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: Introduced 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

- University of Florida Gainesville, Computer & Information Science & Engineering Dept.** Sept. 2014 - present
Assistant Professor, Computer Science
Director, Graphics Imaging & Light Measurement Laboratory (GILMLab)
- University of California Davis, Computer Science Department, Davis, CA** July 2012 – July 2014
UC President's Postdoctoral Fellow
- University of California Berkeley, CITRIS Banatao Institute, Berkeley, CA** July 2012 – July 2014
Affiliated Researcher
- Yale University, Computer Science Department, New Haven, CT** July 2011 – July 2012
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 System Team
Implemented platform enhancements to 3D graphics system; Developed 3D navigation and rendering tools, and 3rd party API's; Notable contributions to AutoCAD 2002, 2004, 2005: 3D Graphics Configuration, True Color Support, Shaded Viewport Plotting, 3D Navigation Tools, Microsoft Windows Logo Certification, and Sheet Set Management.
Special Project - Strategic Accounts: Led pilot project between Autodesk executives and two international architecture firms - HOK and Gensler; Consulted on-site at firms to develop and integrate new technologies.
- Hawley Peterson & Snyder Architects, Mountain View, CA** April 2004 – May 2005
Software Engineer/Project Architect
Led collaborative Design-Assist project to integrate Building Information Modeling Technology into the design process to estimate construction time/cost: Projects - Camino Medical Group Campus, Palo Alto Medical Facility.

RESEARCH SOFTWARE DEVELOPED

- RGBNMatch** - Developed hardware and software for data capture, normal reconstruction and computer assisted matching. Deployed system on-site at the Akrotiri Excavation Laboratory of Wall Paintings, Santorini, Greece
- RGBNRender** - Developed system for generating scientific visualizations of surface details on real-world objects.

HONORS

Google Anita Borg Scholarship for Women in Computer Science: Finalist	2009
Autodesk 2002 Software Developer Award	2002
Shreve Award: MS Thesis Project - For excellence and originality	1999
The Eschweiler Prize: Recognized for outstanding academic accomplishments	1997

SPONSERED RESEARCH

NSF iDigBio Visiting Scholar Award, PI Corey Toler-Franklin	2013
University of California President's Postdoctoral Fellowship, PI Corey Toler-Franklin	2012 - 2014
National Science Foundation (NSF) Graduate Research Fellowship	2005-2008
Presidential Fellowship, Princeton University	2005-2009
Merit Award, Princeton University	2005-2009
Robert James Eidlitz Traveling Fellowship	1998

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 Theran 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

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.

Journal Papers

Learning How to Match Fresco Fragments

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

Journal on Computing and Cultural Heritage 4(2), November 2011.

TEXTBOOK CHAPTERS

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.

INVITED TALKS/WORKSHOPS

University of California San Diego, Conference for African American Researchers in the Mathematical Sciences, San Diego, CA, July 2013, Multi-Spectral Imaging Techniques for Analyzing Biological Specimens

University of Florida iDigBio HUB, Gainesville, Florida, February 2013

Data Capture and Analysis of Artifacts and Biological Specimens Using Multi-Channel Images

The National Evolutionary Synthesis Center, Duke University, Durham, North Carolina, February 2013

Multi-Spectral Imaging Techniques for Analyzing Biological Specimens

Lehman College CUNY Computer Science Department, Bronx, New York, February 2013

Analyzing Biological Specimens Using Multi-Spectral Images

University of California Berkeley, The CITRIS Banatao Institute, Berkeley, California, September 2012
Research Exchange Series: Matching, Visualizing, and Archiving Artifacts Using Multi-Channel Images

The American Museum of Natural History (AMNH), New York, New York, June 2012
Data Acquisition Techniques for Documenting and Analyzing Biological Specimens

Yale University Computer Science Department, New Haven CT, June 2012
Matching, Visualizing and Archiving Cultural Heritage Artifacts Using Multi-Channel Images

Yale University, Peabody Museum, SPNHC 27th Annual meeting, New Haven, CT, June 2012
Digitizing the Thera Frescoes : Practical 3D acquisition methods for museum conservation

Adobe Systems, Inc., Advanced Technologies Lab, San Francisco, California, May 2012.
Matching, Visualizing and Archiving Cultural Heritage Artifacts Using Multi-Channel Images

University of California Berkeley Computer Science Department, Berkeley, California, October 2011
Visual Computing Lab Talk: Computer Graphics and Computer Vision Techniques for Preserving Artifacts

Akrotiri Excavation Laboratory of Wall Paintings, Santorini, Greece, July 2009, July 2010, July 2011
Summer Workshop Session: A Matching System for Reassembling the Thera Frescos

University of Oxford, Oxford, United Kingdom, February 2011
RTISAD Oxford Workshop: Digital Transformations: New developments in cultural heritage imaging

University of California Los Angeles Math Department, Los Angeles, California, January 2011
Guest Lecturer: Applied Math/Image Processing Seminar: Pattern Matching Algorithms and Reassembly Systems

Hewlett Packard Laboratories Palo Alto, California, January 2011
Technical Talk Series: Computer Graphics for Cultural Heritage Preservation

University of Southern California, Los Angeles, California January 2011
Computer Graphics Techniques for Digitizing and Visualizing Artifacts

Rochester Institute of Technology, Center for Imaging Science, Rochester, New York, October 2010
Colloquium Talk: Matching, Visualizing and Analyzing Artifacts Using Multi-Channel Images

The Museum of Modern Art (MoMA) Conservation Department, New York, New York, July 2010
Generating Scientific Illustrations using Non-Photorealistic Rendering

Adobe Systems, Inc., San Jose, California, August 2007
Non-Photorealistic Illustration using RGBN Images

Google Inc., Boulder Colorado, August 2006
Google Tech Talk Series: A Prototype for Controlling Line Density in 3D Models

PROFESSIONAL SERVICE

Memberships

Association for Computing Machinery (ACM)
European Association for Computer Graphics (EG)
IEEE Computer Society
National Society of Black Engineers (NESBE)
American Institute of Architects (AIA)
National Organization of Minority Architects (NOMA)
Wesley L. Harris Scientific Society (Founding Member), Princeton, University (WLHSS)

Technical Program Committee Memberships

Eurographics International Scientific Committee
International Symposium on Virtual Reality, Archaeology and Cultural Heritage, VAST 2010, 2011, 2013
Eurographics Workshop on Graphics and Cultural Heritage, GCH2014
Digital Heritage 2013 (Under the patronage of UNESCO), International Congress 2013
ACM Journal on Computing and Cultural Heritage (JOCCH), 2013, 2014

OTHER SERVICE

Women in Science and Engineering at Princeton Focus Group
Autodesk Design Your Future Program for Women in Science and Technology (2000 – 2004)