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# WILMOT LI

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## EDUCATION

2002-2008  Ph.D. in Computer Science
**University of Washington**, Seattle, WA
Advisors: David Salesin, Maneesh Agrawala, Brian Curless

2000-2002  M.S. in Computer Science
**University of Washington**, Seattle, WA
Advisor: David Salesin

1996-2000  B.S.E. in Computer Science (*cum laude*)
**Princeton University**, Princeton, NJ

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## PUBLICATIONS

*Of my **39** total publications, **32** were published since I joined Adobe in 2008. Amongst the 13 SIGGRAPH papers I have co-authored, several have been very well-received: 3 received mean review scores over 4 (out of a maximum of 5), 2 appeared on the back/inside cover, and my 2007 paper on **Interactive Cutaway Illustrations** appeared on the front cover of the proceedings. In addition, both my 2003 paper on **Adaptive Grid-Based Document Layout** ∫and my 2010 paper on **Illustrating How Mechanical Assemblies Work** were subsequently highlighted in the Communications of the ACM (CACM).*

WrapIt: Computer-Assisted Crafting Of Wire Wrapped Jewelry. E. Iarussi, W. Li, A. Bousseau. ACM Transactions on Graphics (*Proceedings of SIGGRAPH Asia 2015*), Kobe, Japan, 2015.

Visual Transcript: Readable, Skimmable Layout Of Blackboard-Style Lecture Videos. H. Shin, F. Berthouzoz, W. Li, F. Durand. ACM Transactions on Graphics (*Proceedings of SIGGRAPH Asia 2015*), Kobe, Japan, 2015.

Lillicon: Using Transient Widgets to Create Scale Variations of Icons. G. Bernstein, W. Li. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2015*), Los Angeles, CA, 2015.

Style Compatibility for 3D Furniture Models. T. Liu, A. Hertzmann, W. Li, T. Funkhouser. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2015*), Los Angeles, CA, 2015.

Composition-Aware Scene Optimization for Product Images. T. Liu, J. McCann, W. Li, T. Funkhouser. Computer Graphics Forum 34(2) (*Proceedings of Eurographics 2015)*, Zürich, Switzerland, 2015.

Motif: Supporting Novice Creativity through Expert Patterns. J. Kim, M. Dontcheva, W. Li, M. Bernstein, D. Steinsapir. *Proceedings of SIGCHI 2015*, Seoul, Korea, 2015.

Lamello: Passive Acoustic Sensing for Tangible Input Components. V. Savage, A. Head, B. Hartmann, D. Goldman, G. Mysore, W. Li. *Proceedings of SIGCHI 2015*, Seoul, Korea, 2015.

Dynamic Sprites: Artistic Authoring of Interactive Animations. B. Jones, J. Popović, J. McCann, W. Li, A. Bargteil. *Computer Animation and Virtual Worlds, 26(2),* 2014.

Creating Works-Like Prototypes of Mechanical Objects. B. Koo, W. Li, J. Yao, M. Agrawala, N. Mitra. ACM Transactions on Graphics (*Proceedings of SIGGRAPH Asia 2014*), Shenzhen, China, 2014.

PortraitSketch: Face Sketching Assistance for Novices. J. Xie, A. Hertzmann, W. Li, H. Winnemöller. *Proceedings of UIST 2014*, Hawaii, 2014.

Dynamic Sprites. B. Jones, J. Popović, J. McCann, W. Li, A. Bargteil. *Proceedings of Motion in Games* 2013,

PUBLICATIONS CONT'D

Designing and Fabricating Mechanical Automata from Mocap Sequences. D. Ceylan, W. Li, N. Mitra, M. Agrawala, M. Pauly. ACM Transactions on Graphics (*Proceedings of SIGGRAPH Asia 2013*), Hong Kong, 2013.

Content-Based Tools for Editing Audio Stories. S. Rubin, F. Berthouzoz, G. Mysore, W. Li, M. Agrawala. *Proceedings of UIST 2013*, St. Andrews, Scotland, 2013.

DemoCut: Generating Concise Instructional Videos for Physical Demonstrations. P. Chi, J. Liu, M. Dontcheva, W. Li, B. Hartmann. *Proceedings of UIST 2013*, St. Andrews, Scotland, 2013.

Interpreting Concept Sketches. T. Shao, W. Li, K. Zhou, W. Xu, B. Guo, N. Mitra. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2013*), Anaheim, CA, 2013.

Learning Part-Based Templates from Large Collections of 3D Shapes. V. Kim, W. Li, N. Mitra, S. Chaudhuri, S. DiVerdi, T. Funkhouser. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2013*), Anaheim, CA, 2013.

Illustrating How Mechanical Assemblies Work (CACM Research Highlight). N. Mitra, Y. Yang, D. Yan, W. Li, M. Agrawala. CACM, January 2013.

MixT: Automatic Generation of Mixed-Media Tutorials. P. Chi, S. Ahn, A. Ren, M. Dontcheva, W. Li, B. Hartmann. *Proceedings of UIST 2012*, Boston, CA, 2012.

Tutorial-Based Interfaces for Cloud-Enabled Applications. G. Laput, E. Adar, M. Dontcheva, W. Li. *Proceedings of UIST 2012*, Boston, CA, 2012.

UnderScore: Musical Underlays for Audio Stories. S. Rubin, F. Berthouzoz, G. Mysore, W. Li, M. Agrawala. *Proceedings of UIST 2012*, Boston, CA, 2012.

Exploring Collections of 3D Models using Fuzzy Correspondences. V. Kim, W. Li, N. Mitra, S. DiVerdi, T. Funkhouser. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2012*), Los Angeles, CA, 2012.

Tools for Placing Cuts and Transitions in Interview Video. F. Berthouzoz, W. Li, M. Agrawala. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2012*), Los Angeles, CA, 2012.

Pause-and-Play: Automatically Linking Screencast Video Tutorials with Applications. S. Pongnumkul, M. Dontcheva, W. Li, J. Wang, L. Bourdev, S. Avidan, M. Cohen. *Proceedings of UIST 2011*, Santa Barbara, CA, 2011.

Exploration of Continuous Variability in Collections of 3D Shapes. M. Ovsjankikov, W. Li, L. Guibas, N. Mitra. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2011*), Vancouver, Canada, 2011.

A Framework for Content-Adaptive Photo Manipulation Macros: Application to Face, Landscape, and Global Manipulations. F. Berthouzoz, W. Li, M. Dontcheva, M. Agrawala. ACM Transactions on Graphics. Oct 2011.

Design Principles for Visual Communication. M Agrawala, W. Li, F. Berthouzoz. CACM, April 2011.

Exploded View Diagrams of Mathematical Surfaces. O. Karpenko, W. Li, N. Mitra, M. Agrawala. *Proceedings of IEEE Vis 2010*, Salt Lake City, UT, 2010.

Creating Collections with Automatic Suggestions and Example-Based Refinement. A. Secord, H. Winnemöller, W. Li, M. Dontcheva. *Proceedings of UIST 2010*, New York, NY, 2010.

Illustrating How Mechanical Assemblies Work. N. Mitra, Y. Yang, D. Yan, W. Li, M. Agrawala. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2010*), Los Angeles, CA, 2010.

Review of Automatic Document Formatting. N. Hurst, W. Li, K. Marriott. In *Proceedings of DocEng 2009*, Munich, Germany, 2009.

## PUBLICATIONS CONT'D

Generating Photo Manipulation Tutorials by Demonstration. F. Grabler, M. Agrawala, W. Li, M. Dontcheva, T. Igarashi. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2009*), New Orleans, LA, 2009.

Automated Generation of Interactive 3D Exploded View Diagrams. W. Li, M. Agrawala, B. Curless, D. Salesin. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2008*), Los Angeles, CA, 2008.

Interactive Cutaway Illustrations of Complex 3D Models. W. Li, L. Ritter, M. Agrawala, B. Curless, D. Salesin. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2007*), San Diego, CA, 2007.

Painting with Texture. L. Ritter, W. Li, M. Agrawala, B. Curless, D. Salesin. In *Proceedings of 17th Eurographics Symposium on Rendering*, Nicosia, Cyprus, 2006.

Interactive Image-Based Exploded View Diagrams. W. Li, M. Agrawala, D. Salesin. In *Proceedings of Graphics Interface 2004*, London, Canada, 2004. Awarded Michael AJ Sweeney Award for Best Student Paper

Adaptive Document Layout. C. Jacobs, W. Li, E. Schrier, D. Bargeron, D. Salesin. In *Communications of the ACM*, Vol. 47, No. 8, August 2004.

Adaptive Grid-Based Document Layout. C. Jacobs, W. Li, E. Schrier, D. Bargeron, D. Salesin. ACM Transactions on Graphics (*Proceedings of SIGGRAPH 2003*), San Diego, CA, 2003.

Adaptive Document Layout via Manifold Content. C. Jacobs, W. Li, D. Salesin. In *Proceedings of Web Document Analysis Workshop 2003*, Edinburgh, Scotland, 2003.

NPR Virtual Environments. A. Klein, W. Li, M. Kazhdan, W. Correa, A. Finkelstein, T. Funkhouser. In *Proceedings of SIGGRAPH 2000*, New Orleans, LA, 2000.

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## TECH TRANSFERS

Remix, with G. Mysore, F. Berthouzoz, J. Caceres. Shipping with Audition, CC Fall 2015 Release.

Morph Cut, with F. Berthouzoz, K. Wampler, S. Minns. Shipped with Premiere Pro, CC Spring 2015 Release.

Face Track Mode, with X. Bai. Shipped with After Effects, CC Spring 2015 Release.

Artwork Replacement Framework, with D. Simons. Shipped with Character Animator, CC Spring 2015 Release.

Auto Lip Sync, with M. Hoffman, J. Acquavella. Shipped with Character Animator, CC Spring 2015 Release.

Performance-Based Facial Animation, with D. Simons, J. Popović. Shipped with Character Animator, CC Spring 2015 Release.

Interactive Tutorials for Photoshop. Shipped with CC Tutorials, June 2015.

Replace Mesh, with M. Maguire. Shipped with Photoshop CC 14.1, 2013.

Interactive Tutorial Builder V2, with M. Dontcheva. Released on Adobe Labs, 2013.

Tutorial Player iPad App, with M. Dontcheva. Released on App Store, 2012.

3D Align/Distribute, with Z. Gee, P. Falco and M. Maguire. Shipped with Photoshop CS6 Extended, 2012.

Merge 3D Layers, with Z. Gee and P. Falco. Shipped with Photoshop CS6 Extended, 2012.

Interactive Tutorial Builder V1, with M. Dontcheva, R. Huitt and B. Hughes. Released on Adobe Labs, 2011.

Tutorial Builder: PSE, with M. Dontcheva, R. Huitt and V. Gavenda. Completed for Peach Pit Press 2011.

Tutorial Builder: PS, with M. Dontcheva, R. Huitt, L. Seymour and M. Amado. Licensed to Peach Pit Press 2010

## PATENTS

*Of the **11** patents I have co-authored, **7** were filed since I joined Adobe in 2008.*

Interactive scene graph manipulation for visualization authoring, with Leo Liu, Mira Dontcheva, Alan Wilson, Jovan Popovic. Under preparation 2015.

Facial expression capture for character animation, with Xiang Yu, Jianchao Yang, Linjie Luo. Filed 2015.

Geometrically and parametrically modifying user input to assist drawing, with Jun Xie, Holger Winnemöller, and Aaron Hertzmann. Filed 2014

Providing drawing assistance using feature detection and semantic labeling, with Jun Xie, Holger Winnemöller, and Aaron Hertzmann. Filed 2014.

Video tutorials, with S. Pongnumkul, M. Dontcheva, L. Bourdev and S. Avidan. Filed 2010. Issued 2014.

High-level sketch editing, with M. Trapp, and H. Winnemöller. Filed 2010. Issued 2014.

Creating collections with automatic suggestions and example-based refinement, with A. Secord, H. Winnemöller and M. Dontcheva. Filed 2010. Issued 2013.

System and Method for Using Design Features to Search for Page Layout Designs, with M. Dontcheva and R. Kumar. Filed 2010. Issued 2013.

System and method for adaptive document layout via manifold content, with C. Jacobs and D. Salesin. Patent number 7,120,868, issued October 10, 2006.

Interactive exploded views from 2D images, with M. Agrawala. Filed 2004. Issued 2005.

System and method for on-line and off-line advertising in content delivered to a display screen, with W. Hill, M. Cooper, and D. Salesin. Filed 2004. Issued 2006.

System and methods for facilitating adaptive grid-based document layout, with D. Bargeron, C. Jacobs, E. Schrier and D. Salesin. Filed 2004. Issued 2007.

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## PREVIOUS WORK EXPERIENCE

**Research assistant** 09/2001-06/2002 and 12/2004-12/2007
Computer Science, University of Washington, Seattle

**Research intern**, 09/2002-12/2004
Microsoft Research, Seattle
Intern with Document Processing & Understanding Group (Mentors: David Salesin, Maneesh Agrawala)

**Research intern**, 06/2001-09/2001 and 06/2002-9/2002
Microsoft Research, Seattle
Intern with Interactive Visual Media Group (Mentor: David Salesin)

**Teaching assistant** 03/2001-06/2001 and 03/2002-06/2002
Computer Science, University of Washington, Seattle

## Honours

University of Washington Industrial Affiliates Meeting, Madrona Award for Best Poster, Runner-up, 2006

Graphics Interface, Michael AJ Sweeney Award for Best Student Paper 2004

NSERC Postgraduate Fellowship, 2001-2004

University of Washington Entrance Scholarship, 2000

Elected to Phi Beta Kappa, National Undergraduate Honour Society, 2000

Elected to Tau Beta Pi, National Engineering Honour Society, 1998

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## Conference Talks

**Interpreting concept sketches** (with Tianjia Shao)
SIGGRAPH 2013, Anaheim, CA, 2013.

**Exploration of continuous variability in collections of 3D shapes** (with Niloy Mitra)
SIGGRAPH 2011, Vancouver, Canada, 2011.

**Illustrating how mechanical assemblies work** (with Yongliang Yang and Dongming Yan)
SIGGRAPH 2010, Los Angeles, CA, 2010.

**Generating photo manipulation tutorials by demonstration** (with Floraine Grabler)
SIGGRAPH 2009, New Orleans, LA, 2009.

**Automated generation of interactive 3D exploded view diagrams**
SIGGRAPH 2008, Los Angeles, CA, 2008.

**Interactive cutaway illustrations of complex 3D models**
SIGGRAPH 2007, San Diego, CA, 2007.

**Painting with texture**
EGSR 2006, Nicosia, Cyprus, 2006.

**Interactive image-based exploded view diagrams**
Graphics Interface 2004, London, Canada, 2004.

**Adaptive grid-based document layout** (with Chuck Jacobs and Evan Schrier)
SIGGRAPH 2003, San Diego, CA, 2003.

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## Invited Talks

**Design Tools for Digital Fabrication**
Graphics Interface, Invited Speaker Series, NS, 2015
Stanford HCI Seminar, Stanford, CA, 2015

**Creating Stylized Geometry for Digital Fabrication**
Tristate Workshop on Imaging and Graphics, NJ, 2014

**Visualizing and Designing Functional Objects**
University of Toronto, ON, 2013

**Interactive Learning Technologies (Keynote)**
Adobe Education Leaders Summer Institute, Adobe SJ, CA, 2012

INVITED TALKS CONT'D

**Visualizing Variability in Collections Of 3D Shapes**
Data to the People (Joint meeting with Adobe, Stanford, Berkeley), Adobe SF, CA, 2012

**Explaining Complex 3D Objects with Interactive Illustrations**
Gordon Research Conference on Visualization in Science and Education, Bryant University, MA, 2011
ICSTI Winter Workshop, Microsoft Research, Seattle, WA, 2011

**Two Approaches for Extracting and Exploiting Part-Based 3D Structure**
MIT, Cambridge, MA, 2010

**Using the Web to Get Things Done** (with J. Brandt and M. Dontcheva)
Tufts, Somerville, MA, 2010

**Adaptive Layout Techniques**
Stanford University, Stanford, CA, 2010

**Visualizing 3D Structure**
Stanford University, Stanford, CA, 2009
UC Berkeley, Berkeley, CA, 2008

**Interactive Illustrations of Complex Objects**
Berkeley Institute of Design, Berkeley, CA, 2008.
Adobe Systems, San Jose, CA, 2007.
Summer Academy for Advancing Deaf and Hard of Hearing in Computing, UW, Seattle, WA, 2007.

**Interactive Cutaway Illustrations of Complex 3D Models**
University of Toronto, Toronto, Canada, 2007.
Design Machine Group, UW, Seattle, WA, 2006.

**Adaptive Grid-Based Document Layout**
Stanford University, Stanford, CA, 2003.
University of Toronto, Toronto, Canada, 2003.

**Adaptive Document Layout via Manifold Content**
Web Document Analysis Workshop, Edinburgh, Scotland, 2003.

OTHER PROFESSIONAL ACTIVITIES

**Program committee member** for SIGGRAPH (2013, 2014), SIGGRAPH Asia (2015), UIST (2013), EuroVis (2012), I3D (2009-2012), Eurographics Short-Papers (2011), Workshop on Person Oriented Vision (2010)

**General program jury member** for SIGGRAPH (2008)

**Late-breaking program committee member** for SIGGRAPH (2008-2009)

**Technical sketches session chair** for SIGGRAPH (2008-2009)

**Technical papers session chair** for SIGGRAPH (2013, 2014)

**Technical papers session chair** for UIST (2013)

**Reviewer** for ACM SIGGRAPH, ACM SIGGRAPH Asia, ACM UIST, ACM SIGCHI, ACM I3D, IEEE Visualization, IEEE TVCG (Transactions on Visualization and Computer Graphics), Eurographics, EGSR (Eurographics Symposium on Rendering), NPAR (Non-Photorealistic Animation and Rendering), Computers and Graphics, CAD