

Curriculum Vitae: Prof. Ariel Shamir

arik@idc.ac.il

Contact: Efi Arazi School of Computer Science
The Interdisciplinary Center
P.O.B. 167 Herzelia 46150 Israel

Positions

DEAN (2017 - present), Efi Arazi School of Computer Science, The Interdisciplinary Center.
PROFESSOR (2014 - present), Efi Arazi School of Computer Science, The Interdisciplinary Center.
VISITING PROFESSOR (2007 - present), Tel Aviv University.
VICE DEAN (2012 - 2017), Efi Arazi School of Computer Science, The Interdisciplinary Center.
VISITING SCIENTIST & CONSULTANT (2008 - 2016), Walt Disney Research, USA.
CO-FOUNDER AND SENIOR RESEARCH ADVISOR (2013 - present), Camera51 (ArtInCam Ltd).
VISITING SCIENTIST (2013 - 2014 Sabbatical), MIT & Walt Disney Research Labs, Boston.
ASSOCIATE PROFESSOR (2009 - 2014), Efi Arazi School of Computer Science, The Interdisciplinary Center.
ALGORITHMIC RESEARCH MANAGER (2005 - 2013), Sensomatix Ltd.
SENIOR LECTURER (2006 - 2009), Efi Arazi School of Computer Science, The Interdisciplinary Center.
VISITING SCIENTIST (2006 - 2007 Sabbatical), Mitsubishi Electric Research Laboratories, Cambridge.
LECTURER (2000 - 2006), Efi Arazi School of Computer Science, The Interdisciplinary Center.
VISITING SCIENTIST (Summer 2002), Lawrence Livermore National Laboratory, Livermore, California.
POST-DOCTORAL FELLOW (1999 - 2000), The Center for Computational Visualization of TICAM, University of Austin, Texas.
CHIEF SCIENTIST & MANAGER R&D (1995 - 2001), Heshev Developments Ltd.
COMPUTER SCIENCE TEACHER (1995 - 1998), High-school for Science and Art, Jerusalem.
RESEARCH ASSISTANT (1995 - 1998), The Institute of Computer Science, The Hebrew University.
TEACHING ASSISTANT (1993 - 1998), The Institute of Computer Science, The Hebrew University.
SENIOR SOFTWARE ENGINEER (1991 - 1995), Heshev Developments Ltd.

Education

1999: Ph.D. in Computer Science, the Hebrew University, Jerusalem, Israel
1996: M.Sc. in Computer Science, the Hebrew University, Jerusalem, Israel
1991: B.Sc. Cum Laude in Mathematics and Computer Science,
the Hebrew University, Jerusalem, Israel

Membership

ACM SIGGRAPH, IEEE Computer Society, Eurographics and Asia Graphics (member of the EC).

Awards & Grants

- 2014-2016: Listed on Thomson Reuters list of most highly cited researchers
2016: IDC President Award for Outstanding Research
2015: Israel Science Foundation & China NSF Grant for 3 years:
“Data-Driven Visual Media Processing”.
2011: Israel Science Foundation Grant for 4 years:
“Information Enhanced Media Manipulation and Synthesis”.
2008: IDC President Award for Outstanding Research
2007: Israel Science Foundation Grant for 4 years:
“Reconstruction of Complex Surfaces” (Joint grant).
2007: Israel Ministry of Science and Education Tashtiot Grant for 3 years:
“Advanced Methods For Reconstruction Of Three-Dimensional Synthetic Objects” (Joint grant).
2003: IDC President Award for Outstanding Research
2002: Israel Ministry of Science and Education Tashtiot Grant for 3 years:
“Fundamentals of Virtual Reality and Medical Applications” (Joint grant).

Editorials

- Associate Editor, ACM Transactions on Graphics, 2017–present.
- Associate Editor, Graphical Models, 2015–present.
- Associate Editor, Visual Informatics (Elsevier), 2016–present.
- Associate Editor, IEEE Transactions on Visualization and Computer Graphics, 2015–2017.
- Associate Editor, Computers & Graphics: An International Journal of Systems & Applications in Computer Graphics (Elsevier), 2010–2015.
- Wen Gao, Chang Wen Chen, Ariel Shamir, Bo Yan, Guest Editors, *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, Vol. 4, No. 1, 2014, Special Issue on Content-aware Visual Systems: Analysis, Streaming and Retargeting.
- Niloy Mitra, Olga Sorkine, Ariel Shamir, Ayellet Tal, Guest Editors, *Computers & Graphics*, Vol. 35, No. 3, 2011, Special Issue: Shape Modeling International (SMI) Conference 2011.
- Shamir, A., Seungyong, L., Guest Editors, *The Visual Computer*, Vol. 20, No. 4, June 2004, Special Issue on Geometric Modeling.
- Tal, A., Funkhauser, T., Shamir, A., Guest Editors, *Computers & Graphics*, Vol. 30, No. 6, 2006, Special issue on Mesh Processing.
- Shamir, A., Fischer, A., Guest Editors, *Journal of Shape Modeling*, Special Issue on CAD and Geometric Modeling.

Invited Talks

- *Visual Stories*
Microsoft, Herzliya, April 26 , 2017.
- *Passive Human Computation*
GroupSight: Workshop on Human Computation for Image and Video Analysis at HCOMP 2016, Austin Texas, November 3 , 2016.
- *Visual Narrations*
Amazon, Seattle, August 2, 2016.
- *Combining Human Interaction with Computation in Creative Graphics Tools*
College de France, Marie-Paule Cani's Expressive Modeling Seminar: New Advances towards the Seamless Creation of 3D content, Paris France, June 8, 2015.
- *Creating Visual Stories*
Israel Computer Vision Conference, Herzliya Israel, March 24, 2015.
- *Tools for Creative Graphics*
NASA Goddard Space Flight Center, Greenbelt, Md., Information Science and Technology Colloquium, April 23, 2014.
- *Images and Models*
Intel Software Conference, Herzliya Israel, June 24, 2013.
- *Building Collaborative Visual Narrations*
IDC Executive Education, Innovative Forum, March 18, 2013.
- *Micro Human Computation*
YNET Ideas Channel, 2012.
- *Interactive Image Manipulations: Color, Size and Structure*
NASA Goddard Space Flight Center, Greenbelt, Md., Information Science and Technology Colloquium, March 30, 2011.
- *The vision of the image*
TEDxTelAviv, April 26, 2010, Jaffa Port, Israel.
- *A volumetric view of shapes*
Shape Modeling International SMI'10, June 21–23, 2010, Aix-en-Provence, France.
- *Future directions for Retargeting*
Media Retargeting Workshop (in conjunction with ECCV 2010), September 10, 2010, Crete, Greece.

Courses & Tutorials

Siggraph 2016: *Computational Tools for 3D Printing*, Ariel Shamir, Bernd Bickely, Wojciech Matusikz.
Siggraph Asia 2014: *Data-Driven Visual Computing*, K. Xu, S. Hu, A. Shamir, A. Efros, L. Guibas.
Siggraph Asia 2014: *3D Printing Oriented Design: Geometry and Optimization*, Ligang Liu, Ariel Shamir, Charlie Wang and Emily Whiting.
Eurographics 2014: *Data-driven video completion: State of the Art Report*, S. Ilan and A. Shamir.
Siggraph Asia 2012: *Advanced Media Retargeting Techniques*, A. Shamir, O. Sorkine & Alexander Hornung.
Siggraph Asia 2009: *Visual Media Retargeting*, A. Shamir & O. Sorkine.
AIM@SHAPE Summer school 2007: *Shape Modeling and Reasoning, Strategies for Mesh Segmentation*, A. Shamir.
Eurographics 2006: *Mesh Segmentation: State of the Art Report*, A. Shamir.
Eurographics 2002: *View-Dependent Rendering for Polygonal Data-sets*, J. El-Sana, L. De Floriani, E. Puppo, A. Shamir.

Chair

International Conference on Shape Modeling, Herzliya, Israel, June 22–24, 2011 (with Prof. Ayellet Tal).
The 2nd China-Israel Bi-National Conference on Graphics and Geometric Computing, Herzliya, Israel, June 19-20, 2010 (with Prof. Shimin Hu)
The 1st China-Israel Bi-National Conference on Graphics and Geometric Computing, Beijing China, October 10-13, 2009
The 6th Korea-Israel Bi-National Conference on Geometric Modeling and Computer Graphics, Haifa, Israel, November 7–9, 2005.
Chair of Central Israel SIGGRAPH Professional Chapter, 2002 – 2005.

Program committees

2018: Siggraph, Eurographics
2017: Siggraph, GraDiFab
2016: Eurographics, IMVC, GraDiFab
2015: Siggraph, Eurographics, CVM, IMVC
2014: Siggraph, SGP
2013: 3DOR, SGP, CVM
2012: SMI
2011: Siggraph, Siggraph-Asia, Eurographics, SMI (chair)
2010: Siggraph-Asia, Pacific Graphics, SGP, SMI, 3DPVT, 3DOR, GRAPP
2009: Eurographics, Siggraph Jury, Pacific Graphics, SGP, SMI, 3DOR, GRAPP
2008: Siggraph Jury, Pacific Graphics, SGP, SMI, 3DOR, WSCG, GRAPP
2007: Eurographics, Pacific Graphics, WSCG, GRAPP, ISVC, VRST
2006: SMI, WSCG, ISVC, Afrigraph, VRCIA
2005: Pacific Graphics, WSCG, ICEC
2004: Pacific Graphics, CGI

3DPVT = International Symposium on 3D Data Processing, Visualization and Transmission, 3DOR = Eurographics Workshop on 3D Object Retrieval, CGI = Computer Graphics International, CVM = Computational Visual Media, GraDiFab = Eurographics Workshop On Graphics For Digital Fabrication GRAPP = Computer Graphics Theory and Applications, ICEC = Entertainment Computing, IMVC = Israel Machine Vision Conference, ISVC = International Symposium on Visual Computing, SGP = Symposium on Geometry Processing, SMI = International Conference on Shape-Modeling and Applications, VRST = Virtual Reality Software and Technology, VRCIA = Virtual Reality Continuum, WSCG = Computer Graphics, Visualization and Computer Vision.

Teaching

- **Computer Graphics:**
Spring 2010, Spring 2011, Spring 2012, Spring 2013, Spring 2015, Fall 2015, Winter 2017, Fall 2018
- **Machine Learning:**
Fall 2003, Fall 2004, Spring 2008, Fall 2009, Fall 2011, Spring 2016, Spring 2017.
- **Geometric Modeling and Visualization:**
Spring 2002, Spring 2003, Spring 2004, Spring 2006, Spring 2009.
- **Introduction to Computer Science in Java:**
Fall 2000, Fall 2001, Fall 2002, Fall 2003, Fall 2004, Fall 2005, Fall 2007, Fall 2008.
- **Advanced Seminar on Computer Graphics and Modeling:**
 - Algorithm Animation:* Spring 2002
 - Level of Details in Graphics and Visualization:* Spring 2005
 - From Shape to Motion:* Spring 2006
 - Images, Features, Patches:* Fall 2009
 - Information Enhanced Graphics:* Fall 2010
 - Semantics in image processing:* Fall 2011
 - Image & Video manipulations:* Fall 2012
 - Machine Learning in Graphics* Fall 2014
 - Deep Learning in Vision* Fall 2016

Post-Docs

- **Yotam Gingold** (2011) - now at George Mason University.
- **Alexander Agathos** (2012) - Graduated from University of the Aegean, Greece.
- **Tao Chen** (2013) - Graduated from Tsinghua U., Beijing.
- **Ronit Slyper** (2013) - Graduated from Carnegie Mellon U.
- **Andreas Aristidou** (2016) - Graduated from the University of Cambridge.

Graduate Students

- **Moti Kadosh**, MSc. candidate The Interdisciplinary Center.
- **Yarden Yaniv**, MSc. candidate Tel-Aviv University.
- **Ran Badanes**, MSc. Tel-Aviv University, 2018. Thesis: Salient Scene Graph.
- **Guy Rozenthal**, MSc. Tel-Aviv University, 2017. Thesis: Visual Phrases Detection Using Independent and Joint Detectors.
- **Elishai Ezra**, MSc. The Interdisciplinary Center 2017. Thesis: Computer-Aided Spatially Optimized Design of Layer-Assembled Micro-Scale Mechanical Resistance Networks for 3D printing
- **Yonatan Graber**, MSc. The Interdisciplinary Center, 2017. Project: Story Graphs.
- **Ido Arev**, MSc. The Interdisciplinary Center 2017. Thesis: Automatic Editing of Footage from Multiple Social Cameras.
- **Shay Sheinfeld**, MSc. The Interdisciplinary Center 2016. Thesis: Video Summarization using Causality Relations.
- **Amir Mor**, MSc. The Interdisciplinary Center 2016. Thesis: Joint Morpho-Syntactic Processing of Morphologically Rich Languages in a Transition-Based Framework (joint with Dr. Reut Tsarfaty).
- **Tomer Cagan**, MSc. The Interdisciplinary Center 2016. Thesis: Opinionated Natural Language Generation (joint with Dr. Reut Tsarfaty).
- **Lucas Majerowicz**, MSc. The Interdisciplinary Center 2016. Thesis: Synthesizing Diverse Style-Preserving Artifact Arrangements.
- **Nir Ben-Zvi**, MSc. The Hebrew University 2015. Thesis: Line Drawing Video Stylization.
- **Michael Litvin**, MSc. Tel-Aviv University 2015. Thesis: Parameterization Driven 3D Surface Modeling from a Single Image.
- **Shachar Ilan**, MSc. Tel-Aviv University 2014. Thesis: data-driven video completion.
- **Itamar Berger**, MSc. The Interdisciplinary Center, 2013. Thesis: Style and Abstraction in Portrait Sketching.

- **Tzach Yarimi**, MSc. The Interdisciplinary Center, 2013. Thesis: PictureBoard - Interactive Image Arrangement using Context-Based Similarity.
- **Alex Shtof**, MSc. Tel-Aviv University 2013. Thesis: Geosemantic Snapping for Sketch-Based Modeling (joint with Prof. D. Cohen-Or).
- **Roy Shilkrot**, MSc. Tel-Aviv University 2011. Thesis: Identity Transfer in Images for Garments Try-On Experience (joint with Prof. D. Cohen-Or).
- **Liad Serruya**, MSc. The Interdisciplinary Center, 2011. Thesis: Image Compression Terrain Simplification (joint with Dr. Boaz Ben-Moshe).
- **Lior Shapira**, Ph.D. Tel-Aviv University 2010. Thesis: Exploration and Analysis of High-Dimensional Visual Feature Space.
- **Meir-Johnathan Dahan**, MSc. Tel-Aviv University 2010. Thesis: Combining Color and Depth for Enhanced Image Segmentation and Retargeting (joint with Prof. D. Cohen-Or).
- **Roni Zatzarinni**, MSc. Technion 2009. Thesis: Relief Segmentation and Analysis (joint with Prof. A. Tal).
- **Ala Stolpnik**, Msc. Tel-Aviv University 2009. Thesis: Visual Hints for Graph Exploration (joint with Prof. D. Cohen-Or).
- **Michael Rubinstein**, MSc. The Interdisciplinary Center 2009, Thesis: Discrete Approaches for Media Retargeting.
- **Yoav Serbrnik**, MSc. The Interdisciplinary Center 2009, Thesis: Interrogative Visualization of Graphs.
- **Andrei Sharf**, Ph.D. Tel-Aviv University 2008. Thesis: Surface Reconstruction Techniques for Imperfect Raw-Data.
- **Lior Shapira**, Msc Tel-Aviv University 2005. Thesis: Mesh Feature Analysis using Geodesic Mean Shift (joint with Prof. D. Cohen-Or).
- **Amir Shaham**, Msc. Tel-Aviv University 2004. Thesis: Medial Axis Based Solid Representation (joint with Prof. D. Cohen-Or).
- **Andrei Sotzio**, Msc Tel-Aviv University 2002. Thesis: Hierarchical Shape Matching using Union of Spheres (joint with Prof. D. Cohen-Or).

Patents

- WO 1998036630** Parametric font models based on features and constraints
- US 8452084** Method for compressing elevation maps
- US 7477800** Method for Retargeting Images
- US 8380010** Content aware resizing of images and videos
- US 8405681** Image comparison by asymmetric dynamic warping
- US 8400473** Multi-operator media retargeting
- US 8737767** Perceptually guided capture and stylization of 3D human figures
- US 20110242326** System and Method for Utilizing Motion Fields to Predict Evolution in Dynamic Scenes
- US 20130241934** Smart Scribbles for Sketch Segmentation
- US 20140180727** System and Method for Classifying and Identifying a Driver Using Driving Performance Data
- WO 2014031723** Apparatus and Method for Analyzing Driving Performance Data
- US 20140229143** Three-dimensional modeling from single photographs
- US 20170208243** Automatic Image Composition
- WO 2017077533** Real-Time Alpha Compositing For High-Resolution Image Stream
- US 20170032563** System and method for retexturing of images of three-dimensional objects
- US 20170068643** Story Albums

Publications

Journals

1. Manyi Li, Akshay Gadi Patil, Kai Xu, Siddhartha Chaudhuri, Owais Khan, Ariel Shamir, Changhe Tu, Baoquan Chen, Daniel Cohen-Or, Hao Zhang, *GRAINS: Generative Recursive Autoencoders for INdoor Scenes*, ACM Transactions on Graphics, accepted, 2019
2. Miao Wang, Guo-Ye Yang, Jin-Kun Lin, Song-Hai Zhang, Ariel Shamir, Shao-Ping Lu, Shi-Min Hu, *Deep Online Video Stabilization With Multi-Grid Warping Transformation Learning*, IEEE Transactions on Image Processing Volume: 28 Issue: 5 (2283 - 2292), 2019
3. Andreas Aristido, Daniel Cohen-Or, Jessica Hodgins, Yiorgos Chrysanthou, Ariel Shamir, *Deep Motifs and Motion Signatures*, ACM Transactions on Graphics, Volume 37, Number 6, (SIGGRAPH Asia Conference Proceedings), 187:1-187:13, 2018

4. Miao Wang , Ariel Shamir, Guo-Ye Yang, Jin-Kun Lin , Guo-Wei Yang , Shao-Ping Lu , Shi-Min Hu, *BiggerSelfie: Selfie Video Expansion with Hand-held Camera*, IEEE Transactions on Image Processing, 27(12): 5854-5865, 2018
5. Ruizhen Hu, Zhihao Yan, Jingwen Zhang, Oliver van Kaick, Ariel Shamir, Hao Zhang, Hui Huang, *Predictive and Generative Neural Networks for Object Functionality*, ACM Transactions on Graphics, Volume 37, Number 4, (SIGGRAPH Conference Proceedings), 151:1–151:14, 2018
6. Andreas Aristidou, Daniel Cohen-Or, Jessica Hodgins, Ariel Shamir, *Self-similarity Analysis for Motion Capture Cleaning*, Computer Graphics Forum, Volume 37, Number 2, pp. 297–309 (Eurographics 2018 Special Issue) 2018
7. Andreas Aristidou, Joan Lasenby, Yiorgos Chrysanthou, Ariel Shamir, *Inverse Kinematics Techniques in Computer Graphics: A Survey*, Computer Graphics Forum, Volume 37, 2018
8. Elishai Ezra Tsur, Ariel Shamir, *Computer-Aided Spatially Optimized Design of Layer-Assembled Micro-Scale Mechanical Resistance Networks for 3D printing*, Computer Aided Design, Volume 98, pp. 12–23 , 2018
9. Miao Wang, Jun-Bang Liang, Song-Hai Zhang, Shao-Ping Lu, Ariel Shamir, Shi-Min Hu, *Hyper-lapse from Multiple Spatially-overlapping Videos* IEEE Transactions on Image Processing, 27(4): 1735-1747, 2018
10. Oz Radiano, Yonatan Graber, Moshe Mahler, Leonid Sigal, Ariel Shamir *Story Albums: Creating Fictional Stories from Personal Photograph Sets* Computer Graphics Forum, Volume 37: 19-31, 2018
11. Ruizhen Hu, Wenchao Li, Oliver Van-Kaick, Ariel Shamir, Hao Zhang, Hui Huang *Learning to Predict Part Mobility from a Single Static Snapshot* ACM Transactions on Graphics, Volume 36, Number 6, (SIGGRAPH Asia Conference Proceedings), Article No. 227, 2017
12. Adriana Schultz, Ariel Shamir, Ilya Baran, David Levin, Pitchaya Sitthi-Amorn, Wojciech Matusik *Retrieval on Parametric Shape Collections*, ACM Transactions on Graphics, Volume 36, Issue 1, Article No. 11, February 2017
13. Tao Chen, Zhe Zhu, Shi-Min Hu, Daniel Cohen-Or, and Ariel Shamir *Extracting 3D Objects from Photographs using 3-Sweep*, Communications of the ACM, Volume 59, Volume 59, Number 12, December 2016 Pages 121-129
14. Timothy Langlois, Ariel Shamir, Daniel Dror, Wojciech Matusik, David I.W. Levin *Stochastic Structural Analysis for Context-Aware Design and Fabrication*, ACM Transactions on Graphics, Volume 35, Number 6, (SIGGRAPH Asia Conference Proceedings), Article No. 226, 2016
15. Ruizhen Hu, Oliver van Kaick, Bojian Wu, Hui Huang, Ariel Shamir, Hao Zhang *Learning How Objects Function via Co-Analysis of Interactions*, ACM Transactions on Graphics, Volume 35, Number 4, (SIGGRAPH Conference Proceedings), Article No. 47, 2016
16. Nir Ben-Zvi, Jose Bento, Moshe Mahler, Jessica Hodgins, Ariel Shamir, *Line-Drawing Video Stylization*, Computer Graphics Forum, Volume 35, Issue 6, Pages 1832, September 2016

17. Xiao-Nan Fang, Bin Liu, Ariel Shamir *Automatic thread painting generation*, Communications in Information and Systems, Volume 16, Number 4, 2016
18. Yuki Koyama, Shinjiro Sueda, Emma Steinhardt, Takeo Igarashi, Ariel Shamir, Wojciech Matusik, *AutoConnect: Computational Design of 3D-Printable Connectors*, ACM Transactions on Graphics, Volume 34, Number 6, (SIGGRAPH Asia Conference Proceedings), Article No. 231, 2015
19. Ruizhen Hu, Chenyang Zhu, Oliver van Kaick, Ligang Liu, Ariel Shamir, Hao Zhang, *Interaction Context (ICON): Towards a Geometric Functionality Descriptor*, ACM Transactions on Graphics, Volume 34, Number 4, (SIGGRAPH Conference Proceedings), Article No. 83, 2015
20. Maria Shugrina, Ariel Shamir, Wojciech Matusik, *FabForms: Customizable Objects for Fabrication with Validity and Geometry Caching*, ACM Transactions on Graphics, Volume 34, Number 4, (SIGGRAPH Conference Proceedings), Article No. 100, 2015
21. Shachar Ilan, Ariel Shamir, *A Survey on Data-Driven Video Completion*, Computer Graphics Forum, Volume 34, Issue 6, pages 6085, September 2015
22. Eakta Jain, Yaser Sheikh, Ariel Shamir, Jessica Hodgins, *Gaze-driven Video Re-editing*, ACM Transactions on Graphics, Volume 34, Issue 2, February 2015 Article No. 21, 2015
23. Lucas Majerowicz, Ariel Shamir, Alla Sheffer, Holger H. Hoos, *Filling Your Shelves: Synthesizing Diverse Style-Preserving Artifact Arrangements*, IEEE Transactions on Visualization and Computer Graphics, Volume 20, Number 11, pp. 1507-1518, Nov. 2014
24. Ido Arev, Hyun-Soo Park, Yaser Sheikh, Jessica Hodgins, Ariel Shamir, *Automatic Editing of Footage from Multiple Social Cameras*, ACM Transactions on Graphics, Volume 33, Number 4, (SIGGRAPH Conference Proceedings), paper 81, 2014
25. Yahan Zhou, Shinjiro Sueda, Wojciech Matusik, Ariel Shamir, *Boxelization: Folding 3D Objects Into Boxes*, ACM Transactions on Graphics, Volume 33, Number 4, (SIGGRAPH Conference Proceedings), paper 71, 2014
26. Adriana Schulz, Ariel Shamir, David Levin, Pitchaya Sitthi-Amorn, Wojciech Matusik, *Design and Fabrication by Example*, ACM Transactions on Graphics, Volume 33, Number 4, (SIGGRAPH Conference Proceedings), paper 62, 2014
27. Kai Xu, Rui Ma, Hao Zhang, Chenyang Zhu, Ariel Shamir, Daniel Cohen-Or, Hui Huang, *Organizing Heterogenous Scene Collection through Contextual Focal Points*, ACM Transactions on Graphics, Volume 33, Number 4, (SIGGRAPH Conference Proceedings), paper 35, 2014
28. Johannes Kopf, Ariel Shamir, Pieter Peers *Content-Adaptive Image Downscaling*, ACM Transactions on Graphics, Volume 32, Number 6, (SIGGRAPH Asia Conference Proceedings), pages 173:1–173:8, 2013
29. Tao Chen, Zhe Zhu, Ariel Shamir, Shi-Min Hu, Daniel Cohen-Or, *3-Sweep: Extracting Editable Objects from a Single Photo*, ACM Transactions on Graphics, Volume 32, Number 6, (SIGGRAPH Asia Conference Proceedings), pages 195:1–195:10, 2013

30. Itamar Berger, Ariel Shamir, Moshe Mahler, Elizabeth Carter, Jessica Hodgins, *Style and Abstraction in Portrait Sketching*, ACM Transactions on Graphics, Volume 32, Number 4, (SIGGRAPH Conference Proceedings), pages 55:1–55:12, 2013
31. Oliver van Kaick, Kai Xu, Hao Zhang, Yanzhen Wang, Shuyang Sun, Ariel Shamir, Daniel Cohen-Or *Co-Hierarchical Analysis of Shape Structures*, ACM Transactions on Graphics, Volume 32, Number 4, (SIGGRAPH Conference Proceedings), pages 69:1–69:10, 2013
32. Shi-Sheng Huang, Ariel Shamir, Chao-Hui Shen, Hao Zhang, Alla Sheffer, Shi-Min Hu, Daniel Cohen-Or *Qualitative Organization of Collections of Shapes via Quartet Analysis*, ACM Transactions on Graphics, Volume 32, Number 4, (SIGGRAPH Conference Proceedings), pages 71:1–71:10, 2013
33. Honghua Li, Yanzhen Wang, Junjie Cao, Hao Zhang, Ariel Shamir, and Daniel Cohen-Or, *Curve style analysis in a set of shapes*, Computer Graphics Forum, Volume 32, Issue 6, pages 7788, 2013
34. Tao Chen, Jun-Yan Zhu, Ariel Shamir, Shi-Min Hu, *Motion-Aware Gradient Domain Video Composition*, IEEE Transactions on Image Processing, Volume 22, Issue 7, Pages 2532 – 2544, 2013
35. Alex Shtof, Alexander Agathos, Yotam Gingold, Ariel Shamir, Daniel Cohen-Or, *Geosemantic Snapping for Sketch-Based Modeling*, Computer Graphics Forum, Volume 32, Number 2 (proc. Eurographics), pages 245–253, 2013
36. Tao Chen, Ping Tan, Li-Qian Ma, Ming-Ming Cheng, Ariel Shamir, and Shi-Min Hu, *PoseShop: Human Image Database Construction and Personalized Content Synthesis*, IEEE Transactions on Visualization and Computer Graphics, Volume 19 Issue 5, Pages 824-837, May 2013
37. Roy Shilkrot, Daniel Cohen-Or, Ariel Shamir, Ligang Liu, *Garment Personalization via Identity Transfer*, IEEE Computer Graphics And Applications, Volume 33, Issue 4, pages 62 – 72, 2012
38. Honghua Li, Ibraheem Alhashim, Hao Zhang, Ariel Shamir, and Daniel Cohen-Or *Stackabilization*, ACM Transactions on Graphics, Volume 31, No. 6, (Proceedings SIGGRAPH Asia), Article No. 158, 2012
39. G. Noris, D. Sykora, A. Shamir, S. Coros, B. Whited, M. Simmons, A. Hornung, M. Gross, R. Sumner, *Smart Scribbles for Sketch Segmentation*, Computer Graphics Forum, Volume 31, Issue 8, pages 2516-2527, December 2012
40. Meir Johnathan Dahan, Nir Chen, Ariel Shamir and Daniel Cohen-Or *Combining Color and Depth for Enhanced Image Segmentation and Retargeting*, The Visual Computer, Volume 28, Number 12, Pages 1181–1193, 2012
41. Yotam Gingold, Ariel Shamir, Daniel Cohen-Or, *Perceptual Micro Human Computation for Visual Tasks*, ACM Transactions on Graphics, Volume 31, Number 5, 119:1–119:12, 2012
42. Chen Goldberg, Tao Chen, Fang-Lue Zhang, Ariel Shamir, Shi-Min Hu, *Data-Driven Object Manipulation in Images*, Computer Graphics Forum, Volume 31, Number 3, Special issue: proceedings of Eurographics, 2012
43. Ariel Shamir, Alla Stolpnik, *Multivariate Graphs Exploration using Interactive Visual Queries*, Computers and Graphics, Volume 36, Issue 4, Pages 257-264, June 2012

44. Ron Maharik, Mikhail Bessmeltsev, Alla Sheffer, Ariel Shamir, Nathan Carr *Digital Micrography*, ACM Transactions on Graphics, Volume 29, Number 3, (SIGGRAPH Conference Proceedings), 100:1-100:12, 2011
45. Yanzhen Wang, Kai Xu, Jun Li, Hao Zhang, Ariel Shamir, Ligang Liu, Zhiquan Cheng, and Yueshan Xiong, *Symmetry Hierarchy of Man-Made Objects*, Computer Graphics Forum, Volume 30, Number 3, pages 287–296, Special issue: proceedings of Eurographics, 2011
46. Michael Rubinstein, Diego Gutierrez, Olga Sorkine, Ariel Shamir, *A Comparative Study of Image Retargeting*, ACM Transactions on Graphics, Volume 29, Number 5 (Proceedings SIGGRAPH Asia - TOG Article: 160), 2010
47. Shy Shalom, Ariel Shamir, Hao Zhang, Daniel Cohen-Or, *Cone Carving for Surface Reconstruction*, ACM Transactions on Graphics, Volume 29, Number 5 (Proceedings SIGGRAPH Asia - TOG Article: 150), 2010
48. Alon Lerner, Yiorgos Chrysanthou, Ariel Shamir, Daniel Cohen-Or, *Context-Dependent Crowd Evaluation*, Computer Graphics Forum, Volume 29, Number 7, pages 2197–2206, Special issue: proceedings of the 18th Pacific Conference on Computer Graphics and Applications, 2010.
49. L. Shapira, S. Shalom, A. Shamir, D. Cohen-Or, and H. Zhang, *Contextual Part Analogies in 3D Objects*, International Journal of Computer Vision, Volume 89 , Issue 2-3 (September 2010) pages 309–326, 2010
50. Rony Zatzarinni, Ayellet Tal, Ariel Shamir, *Relief Analysis and Extraction*, ACM Transactions on Graphics, Volume 28, Number 5, (SIGGRAPH ASIA Conference Proceedings), 2009
51. Tao Chen, Cheng Ming Ming, Shi-Min Hu, Ping Tan, Ariel Shamir, *Sketch2Photo: Internet Image Montage*, ACM Transactions on Graphics, Volume 28, Number 5, (SIGGRAPH ASIA Conference Proceedings), 2009
52. M. Rubinstein, A. Shamir, S. Avidan, *Multi-operator Media Retargeting*, ACM Transactions on Graphics, Volume 28, Number 3, (SIGGRAPH Conference Proceedings), 2009
53. A. Shamir, and S. Avidan, *Seam carving for media retargeting*, Communications of the ACM, Volume 52, Number 1, pages 77-85, January 2009
54. Shapira, L., Shamir, A., Cohen-Or, D. *Image Appearance Exploration by Model Based Navigation*, Computer Graphics Forum, Volume 28, number 2, (Eurographics 2009 Conference Proceedings) Second best paper award.
55. Liu, F., Zhang, H., Shamir, A., Cohen-Or, D. *A Part-aware Surface Metric for Shape Processing*, Computer Graphics Forum, Volume 28, number 2, (Eurographics 2009 Conference Proceedings)
56. Kraevoy, V., Sheffer, A., Shamir, A., Cohen-Or, D. *Non-homogeneous Resizing of Complex Models*, ACM Transactions on Graphics, Volume 27, Number 5, December (SIGGRAPH ASIA Conference Proceedings), 2008

57. Shapira L., Shamir, A., *Local Geodesic Parametrization: An Ant's Perspective*, in "Mathematical Foundations of Scientific Visualization, Computer Graphics, and Massive Data Exploration". Moller, Torsten; Hamann, Bernd; Russel, Robert (Eds.) Series: Mathematics and Visualization, Springer, 2009
58. Shamir A., *A Survey on Mesh Segmentation Techniques*, Computer Graphics Forum, Volume 27, Number 6: pages 1539-1556, 2008.
59. Rubinstein, M., and Shamir, A., and Avidan, S. *Improved Seam carving for Video Retargeting*, ACM Transaction on Graphics, Volume 27, Number 3, (SIGGRAPH Conference Proceedings), 2008
60. Shamir A., Cohen-Or D., Shapira, L., *Consistent Mesh Partitioning, and Skeletonization*, The Visual Computer, Volume 24, number 4: pages 249–259 ,2008.
61. Avidan, S. and Shamir, A., *Seam carving for content aware image resizing*, ACM Transaction on Graphics, Volume 26, Number 3, (SIGGRAPH 2007 Conference Proceedings).
62. Sharf, A., Lewiner, T., Shamir, A., Kobbelt, L., *On-the-fly Curve Skeleton Computation for 3D Shapes*, Computer Graphics Forum, Volume 26, number 3, September 2007, pages 323–328 (Eurographics 2007 Conference Proceedings).
63. Gal, R., Shamir, A., Cohen-Or D., *Pose-Oblivious Shape Signature*, IEEE Transactions on Visualization and Computer Graphics, Volume 13, No. 2, pp. 261–271, 2007.
64. Sharf, A., Blumenkrants, M., Shamir, A., and Cohen-Or, D., *Snap-Paste: An Interactive Technique for Easy Mesh Composition*, The Visual Computer, Volume 22, No. 9-11, pages 835–844, September, (Pacific Graphics 2006 Conference Proceedings).
65. Sharf, A., Lewiner, T., Shamir, A., Kobbelt, L., Cohen-Or, D., *Competing Fronts for Coarse-to-Fine Surface Reconstruction*, Computer Graphics Forum, Volume 25 No. 3 , pages 389–398, (Eurographics 2006 Conference Proceedings).
66. Shamir, A., Rubinstein, M., Levinboim, T., *Generating Comics From 3D Interactive Computer Graphics*, IEEE Computer Graphics and Applications, Volume 26, No. 3, pages 30–38, 2006.
67. Shamir, A., Shaham, A., *Skeleton Based Solid Representation with Topology Preservation*, Graphical Models, Volume 68, pages 307–321, 2006.
68. Shamir, A., Shapira L., Cohen-Or, D., *Mesh Analysis using Geodesic Mean Shift*, The Visual Computer, Volume 22, pages 1–10, 2006.
69. Lee, Y., Lee, S., Shamir, A., Cohen-Or, D., Seidel, H.-P. *Mesh scissoring with minima rule and part salience*, Computer Aided Geometric Design, special issue on geometry processing, Volume 22, No. 5 , pages 444–465, July 2005.
70. Shamir, A., Lee, Y., (guest editors) *Special Section on the Fourth Israel-Korea Bi-National Conference on Geometric Modeling and Computer Graphics*. The Visual Computer Volume 20, No. 4, pages 215–216, 2004.
71. Shamir, A., Sotzio, A., Cohen-Or, D. *Enhanced Hierarchical Shape Matching for Shape Transformation*, International Journal for Shape Modeling IJSM, Volume 9, No. 2, 2003.

72. Shamir, A., *Constraint Based Approach for Automatic Hinting of Digital Typefaces*, ACM Transactions on Graphics, Volume 22, No. 3, pages 131–151, 2003.
73. Bajaj, C., Pascucci, V., Shamir, A., Holt, J. R., Netravali A. N., *Dynamic Maintenance and Visualization of Molecular Surfaces* Discrete Applied Mathematics, Volume 127, No. 1, pages 23–51, 2003.
74. Shamir, A., Rappoport, A., *Compacting Oriental Fonts by Parametric Element Optimization*, The Visual Computer, Volume 15 No. 6, 1999, pp. 302–318.
75. Shamir, A., Rappoport, A., *Quality enhancements of digital typeface boundary representations*. Computers & Graphics, Volume 21, No. 6, special issue on Graphics in Electronic Printing and Publishing, 1997, pp. 713–725.
76. Shamir, A., Rappoport, A., *Extraction of typographic elements from outline representations of fonts*. Computer Graphics Forum, Volume 15, No. 3, 1996 pp. 259–268, Conference issue, proceedings, Eurographics'96 (best Paper Award 3rd place).

Books

1. Daniel Cohen-Or, Chen Greif, Tao Ju, Niloy J. Mitra, Ariel Shamir, Olga Sorkine-Hornung, Hao (Richard) Zhang, *A Sampler of Useful Computational Tools for Applied Geometry, Computer Graphics, and Image Processing*, A. K. Peters/CRC Press, May 21, 2015
2. Shamir, A., *Data Structures*, The Hebrew University Student Press, Jerusalem 1992 (Textbook in Hebrew).

Refereed Conferences

1. Tom Hitron, Yoav Orlev, Iddo Wald, Ariel Shamir, Hadas Erel, Oren Zuckerman, *Can Children Understand Machine Learning Concepts? The Effect of Uncovering Black Boxes*, Proceedings of ACM CHI Conference on Human Factors in Computing Systems, accepted, 2019
2. Paul L. Rosin, David Mould, Itamar Berger, John Collomosse, Yu-Kun Lai, Chuan Li, Hua Li, Ariel Shamir, Michael Wand, Tinghuai Wang, Holger Winnemoller, *Benchmarking Non-Photorealistic Rendering of Portraits* Proceeding of the joint Symposium on Computational Aesthetics Sketch-Based Interfaces and Modeling Non-Photorealistic Animation and Rendering, Expressive 2017
3. Guy Rozenenthal, Ariel Shamir, Leonid Sigal, *Learn How to Choose: Independent Detectors versus Composite Visual Phrases* Proceeding of the workshop on applications of computer vision, WACV 2017
4. Shay Sheinfeld, Yotam Gingold, Ariel Shamir, *Video Summarization using Causality Graphs*, Workshop on Human Computation for Image and Video Analysis, @HCOMP 2016 (best paper award)
5. Ronit Slyper, Guy Hoffman, Ariel Shamir, *Mirror Puppeteering: Animating Toy Robots in Front of a Webcam* Proc. international conference on Tangible, Embedded and Embodied Interaction TEI 2015, pages 241–248, 2015.

6. Shachar Ilan, Ariel Shamir, *Data-Driven Video Completion* Proceedings Eurographics, State of the Art Report, pages 119–133, 2014.
7. Kihwan Kim, Matthias Grundmann, Ariel Shamir, Iain Matthews, Jessica Hodgins, Irfan Essa *Motion Fields to Predict Play Evolution in Dynamic Sport Scenes*, Proc. Computer Vision and Pattern Recognition, CVPR 2010.
8. Alon Lerner, Yiorgos Chrysanthou, Ariel Shamir, Daniel Cohen-Or *Data Driven Evaluation of Crowds* Proceedings MIG 2009: pages 75–83
9. Shapira L., Avidan S., Shamir, A., *Mode-Detection via Median-Shift*, IEEE International Conference on Computer Vision, ICCV 2009.
10. Shapira L., Shalom S., Shamir, A., Cohen-Or, D., *Part Analogies in Sets of Objects*, Eurographics Workshop on 3D Object Retrieval, pages 33–40, 2008.
11. Boaz Ben-Moshe, Liad Serruya, Ariel Shamir *Image Compression Terrain Simplification* Proceedings of the 19th Annual Canadian Conference on Computational Geometry, pages 125–128, 2007.
12. Shamir, A., *Segmentation and shape extraction of 3D boundary meshes*, Eurographics 2006 - State of the Art Reports pages 137–149, 2006.
13. Blumenkrants, M., Starovisky, H., Shamir, A., *Narrative Algorithm Visualization*, Proceedings ACM Symposium on Software Visualization, pages 17–26, September 2006.
14. Lau, E., Sharlin, E., Shamir, A., *A Robotic Interface for Retrieval of Distributed Multimedia Content*, The Eleventh International Conference on Distributed Multimedia Systems, (DMS '05), Banff, AB, Canada, Sep. 2005.
15. Lee, Y., Lee, S., Shamir, A., Cohen-Or, D., Seidel, H.-P. *Intelligent Mesh Scissoring Using 3D Snakes*, Proceedings Pacific Graphics 2004, pages 279–287.
16. Shamir, A., *A Formulation of Boundary Mesh Segmentation*, Proceedings of the 2nd International Symposium on 3D Data Processing, Visualization & Transmission 2004 (3DPVT '04), pages 82–89.
17. Shaham, A., Shamir, A., Cohen-Or, D., *Medial Axis Based Solid Representation*, Proceedings of ACM Symposium on Solid Modeling and Applications 2004, pages 37–44.
18. Sotzio, A., Shamir, A., *Feature Sensitive 3D Shape Matching*, Proceedings Computer Graphics International 2004 (CGI '04), pages 596–599.
19. Friedman, D., Feldman, Y., Shamir, A., Tsvi Dagan, *Automated Creation of Movie Summaries in Interactive Virtual Environments*, Proceedings IEEE Virtual Reality 2004, pages 191–198.
20. Shamir, A., *A View on Views*, Lecture Notes in Computer Science, Vol. 3031, Proceedings Smart Graphics 2004: 4th International Symposium, pages 90–100, Springer-Verlag.
21. Shamir, A. *Feature-Space Analysis of Unstructured Meshes*, Proceedings, IEEE Visualization 2003, Seattle, Washington, pages 185–192.
22. Shamir, A., Pascucci, V., *Temporal and Spatial Level of Details for Dynamic Meshes*, Proceedings, Virtual Reality Systems and Techniques 2001 (VRST '01), Banff, Canada, pages 423–430 .

23. Shamir, A., Pascucci, V., Bajaj, C., *Multi-Resolution Dynamic Meshes with Arbitrary Deformation*, Proceedings IEEE Visualization 2000, Salt Lake City, Utah, pages 423–430.
24. Shamir, A., Rappoport, A., *Feature-Based Design of Fonts Using Constraints*. Electronic Publishing, Artistic Imaging and Digital Typography, Proc. of the EP'98 and RIDT'98 Conferences, St Malo, March 30 - April 3, 1998 Eds. Roger D. Hersch, Jacques Andre, Heather Brown, LNCS, Springer Verlag, 1998

Other Publications

1. Shamir A., Cohen-Or D., Shapira, L., *Consistent Partitioning of Meshes*, Technical report Tel-Aviv University 2005.
2. Shamir, A., Shapira, L., Cohen-Or, D., Goldental, R. *Geodesic Mean Shift*, Proc. 5th Korea Israel binational conference on geometric modeling and computer graphics, Seoul 2004, pages 51–56.
3. Shamir, A., Sotzio, A., Cohen-Or, D. *Hierarchical Shape Matching and Transformation using Union of Spheres*, Proc. Israel-Korea bi-national conference on geometric modeling and computer graphics, 2003.
4. Bajaj, C., Shamir, A., Sohn, B.-S. *Progressive Tracking of Isosurfaces in Time-Varying Scalar Fields*, CS & TICAM Technical Report TR-02-4, University of Texas at Austin, 2002
5. Shamir, A., Pascucci, V., Bajaj, C., *T-DAG : a Multi-Resolution Model for Time-Dependent Visualization* Technical Report, Texas Institute for Computational and Applied Mathematics.
6. Bajaj, C., Pascucci, V., Shamir, A., Holt, J. R., Netravali A. N., *Multi-resolution Molecular Shapes* Technical Report 99-42, Texas Institute for Computational and Applied Mathematics.
7. Shamir, A., Rappoport, A., *Digital Typefaces from Geometric Modeling Perspective*, Proc. Israel-Korea bi-national conference on geometric modeling, 1998.
8. Shamir, A., Rappoport, A., *Dynamic Typography*, Technical report, Institute of Computer Science, The Hebrew University, 1998.
9. Shamir, A., Rappoport, A., *LiveType: a Parametric Font Model Based on Features and Constraints*. Technical Report TR-97-11, Institute of Computer Science, The Hebrew University, 1997 (Technical Sketch presentation in SIGGRAPH'97).