Alla Sheffer
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Summary: Alla Sheffer investigates algorithms for shape modeling and analysis in the context of computer graphics applications, and is best known for her research on mesh parameterization, hexahedral meshing, and perception driven shape modeling. Sheffer is the recipient of the Canadian Human Computer Communications Society 2018 Achievement Award. She is the recipient of two NSERC I2I grants, faculty awards from IBM, Google and Adobe, an NSERC Discovery Accelerator award, a Killam research fellowship, and an Audi Production Award. Dr. Sheffer has served as an Associate Editor of all three major computer graphics journals (ACM TOG, IEEE TVCG, and Eurographics CGF), served as a program co-chair for the Eurographics 2018 conference, and as a general co-chair for the Pacific Graphics'18 and GMP'19 conferences. Previously, Dr. Sheffer has been a program co-chair for both of the top-ranked specialized geometry processing conferences (SGP'06, SMI'13). She had co-authored over 100 peer-reviewed publications. These include 42 papers in ACM Transactions on Graphics (including 38 papers in SIGRAPH/SIGGRAPH Asia proceedings), the topmost competitive CG venue; 22 of these were published in the last five years. She holds six recent patents on methods for sketch analysis and hexahedral mesh generation. Her bibliometrics (Google Scholar, May 2019) are 8007 citations, h-index 50, and i10-index 83.

EDUCATION

Hebrew University of Jerusalem, Israel	**Ph.D.**	Computer Science	1995-1999
Hebrew University of Jerusalem, Israel	**M.Sc.**	Computer Science	1992-1995
Hebrew University of Jerusalem, Israel	**B.Sc.**	Mathematics & Computer Science	1988-1991

EMPLOYMENT

University of British Columbia	Professor	2013-present
INRIA Rhone-Alpes/ INPG Grenoble France	Visiting/Invited Professor	2010-2011
University of British Columbia	Associate Professor	2008-2013
University of British Columbia	Assistant Professor	2003-2008
Computer Science Department, Technion, Israel	Assistant Professor	2001-2003
University of Illinois at Urbana-Champaign, USA	Postdoctoral Researcher	1999-2001
Fluent, Inc. IL, USA	Consultant	1996-1999

TEACHING and SUPERVISION

Courses: Computer Graphics, Geometric Modeling (undergraduate and graduate), Video Game Programming

Students/Postdocs Supervised:

- *Ongoing*
  - *sole supervision:* 1 Postdoc, 5 PhD, 2 MSc.
  - *co-supervised:* 1 PhD
- *Graduated:*
  - *sole supervision:* 5 Postdocs, 3 PhD, 16 MSc, 15 undergraduate
  - *co-supervised:* 3 PhD, 8 MSc

AWARDS:

- Canadian Human Computer Communications Society Achievement Award, 2018
- UBC Computer Science Department Faculty Mentoring Award, 2018
- Outstanding paper award, *NAMRC (International Manufacturing Research Conference)* 2015
- Discovery Accelerator Supplement, *NSERC*, 2012 (details listed in the grants section)
- Audi Production Award, *Audi*, 2011
- Killam Research Fellowship, *Office of the Vice President, Research, UBC*, 2009
- UBC Computer Science Department Award for Excellence in Teaching, 2007,

- Chateaubriand Visiting Scholar Fellowship, *French Ministry of Foreign Affairs*, 1997.

GRANTS

- *Principal Investigator:*
    - NSERC (National Science & Engineering Research Council, Canada) Discovery (2018-2023, $370,000; 2012-2018, $312,000; 2007-2012, $130,000; 2003-2007, $115,000)
    - NSERC Idea2Innovation (2016, $124,700; 2014, $124,900)
    - NSERC DND Supplement (2018-2021, $120,000)
    - Google Faculty Awards (2019, $39,600; 2017, $38,300)
    - NVIDIA Research GPU Gifts (2018, $5,000, 2017, $1,500; 2016, $1,200)
    - Adobe Faculty Awards (2018, $8,500; 2017, $13,500; 2015, $7,500; 2011, $20,000; 2008, $30,000)
    - NSERC Discovery Accelerator Supplement (2012-2015, $120,000)
    - NSERC RTI (2012, $33,220)
    - GEOIDE NCE (2007-2008, $60,000)
    - IBM Faculty Award (2006, $35,000)
- *Co-Investigator (funds share listed):*
    - GRAND NCE (2012-2015, $150,000)
    - INRIA Share, France (2009-2011, $3,000)
    - MITACS NCE (2003-2011, $150,000)

RESEARCH/COMMUNITY IMPACT:

Invited Plenary Symposium/Conference Presentations:

- Pacific Graphics (Pacific Conference on Computer Graphics and Applications), Keynote, 2019
- Graphics Interface, CHCCS Achievement Award Talk, 2018
- Geometry and Computational Design Symposium, TU Vienna, Keynote, 2018,
- 26th International Meshing Roundtable, Keynote, 2017
- CAD (Computer Aided Design), Keynote, 2016
- Geometry and Algorithms for Architecture and Design Symposium, Denmark, 2015
- The 25th Canadian Conference on Computational Geometry, Keynote, 2013
- Polyhedral Surfaces and Industrial Applications Symposium, Austria, Keynote, 2007.
- IEEE Shape Modelling International (SMI), Keynote, 2006
- Imagina (23rd European digital content creation conference), Panelist, 2005

Other Invited Presentations:

- *Since 2013:* 6 invited conference/workshop presentations, 20 invited talks at universities, research and industrial labs
- *Pre 2013:* 9 invited conference/workshop presentations, 2 peer-reviewed conference tutorials, 52 invited talks at universities, research and industrial labs

Conference Organizing:

- *Program Committee Co-chair:* Eurographics'18, 3DV (International Conference on 3D Vision)'18, IEEE Shape Modeling International'13, ACM/Eurographics Symposium on Geometry Processing'06, International Meshing Roundtable'00
- *Conference Co-Chair*: International Conference on Geometric Modeling and Processing (GMP)'19, Pacific Graphics (Pacific Conference on Computer Graphics and Applications)'18, International Meshing Roundtable'01
- *Program Committee Member (since 2013):* ACM SIGGRAPH, ACM SIGGRAPH Asia (sort sub-committee and program committee), Eurographics, ACM/Eurographics Symposium on Geometry Processing, IEEE Shape Modelling International**,** Advances in Architectural Geometry, ACM Sketch-Based Interfaces and Modeling, 3D IMPVT,

Geometric Modeling and Processing, Pacific Graphics, SIAM/ACM Geometric and Physical Modeling, Graphics Interface

Associate Editorships:

- ACM Transactions on Graphics (TOG), 2016-present
- Computational Visual Media, 2015-present
- Computer Graphics Forum, 2014-2018
- IEEE Transactions of Visualization and Computer Graphics (TVCG), 2012-2017
- Journal of Graphical Models, 2010-2014
- Computer Aided Geometric Design, 2009-2012
- Computers and Graphics, 2007-2009

Review panels for funding agencies:

- German Excellence Initiative (DFG), evaluation panel member, 2018
- NSERC Discovery Grants, evaluation group member, 2014-2015, 2017
- German Excellence Initiative (DFG), graduate school evaluation, evaluation panel member, 2011

SELECTED PUBLICATIONS

Publication Context:

Venues: In computer graphics (CG), most conference proceedings are published as journal issues. The two top CG conferences are SIGGRAPH and SIGGRAPH Asia (both published in ACM Transactions on Graphics/TOG). Eurographics (published in Computer Graphics Forum/CGF) is the next best general CG venue. TOG is ranked as the top CG journal and has the highest impact factor (4.1) among the 104 journals in "Computer Science: Software Engineering" (Thomson Reuters). IEEE Transactions on Visualization and Computer Graphics (TVCG) is the second best journal for CG research and CGF is third. The more specialized conferences for geometry modeling are Symposium on Geometry Processing (SGP) and Shape Modeling International (SMI). Symposium on Computer Animation (SCA) is the top specialized venue for computer animation research.

Note on Paper Awards: The top graphics venues (TOG, SIGGRAPH, SIGGRAPH Asia) do not grant any type of best paper awards on the principle that a publication in these venues is by itself a stamp of excellence.

Author Order: In the CG community, author order typically reflects degree of contribution. Student contributors, especially those publishing their thesis research, are typically listed ahead of more senior researchers.

In the list below names of students/postdocs I supervised are listed in italic.

Journals

J1. *C. Araújo*,* D. Cabiddu*, M. Attene, M. Livesu*, N. Vining,* A. Sheffer, *Surface2Volume: Surface Segmentation Conforming Assemblable Volumetric Partition,* **ACM Transactions on Graphics (Proc. SIGGRAPH)** *2019.*

J2. *E. Rosales,* J. Rodriguez, A. Sheffer, *SurfaceBrush: From Virtual Reality Drawings to Manifold Surfaces,* **ACM Transactions on Graphics (Proc. SIGGRAPH)** 2019.

J3. S.-H. Hung, C.-Y. Yao, Y.-J. Fang, P. Tan, R.-R. Lee, A. Sheffer, H.-K. Chu*, Micrography QR Codes,* **IEEE Transactions on Visualization and Computer Graphics (TVCG)***,* 2019

J4. *M Li*, D. M. Kaufman, V. G. Kim, J. Solomon, A. Sheffer, *OptCuts: Joint Optimization of Surface Cuts and Parameterization,* **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)** 2018.

J5. C. Li, H. Pan, Y. Liu, X. Tong, A. Sheffer, W. Wang, R*obust Flow-Guided Neural Prediction for Sketch-Based Freeform Surface Modeling ,* **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)** 2018.

J6. A. Muntoni, M. Livesu, R. Scateni, A. Sheffer, D. Panozzo, *Axis-Aligned Height-Field Block Decomposition of 3D Shapes,* **ACM Transaction on Graphics,** 2018*.*

J7. *S. Hoshyari, E. Dominici*, A. Sheffer, N. Carr, D. Ceylan, Z. Wang, *I-C. Shen*, *Perception-Driven Semi-Structured Boundary Vectorization,* **ACM Transactions on Graphics (Proc. SIGGRAPH)***,* 2018.

J8. *C. Liu, E. Rosales*, A. Sheffer, *StrokeAggregator: Consolidating Raw Sketches into Artist-Intended Curve Drawings,* **ACM Transactions on Graphics (Proc. SIGGRAPH)***,* 2018

J9. *M. Limper, N. Vining*, A Sheffer, *Box Cutter: Atlas Refinement for Efficient Packing via Void Elimination,* **ACM Transactions on Graphics (Proc. SIGGRAPH)***,* 2018.

J10. *M. Li*, A. Sheffer, E. Grinspun, *N. Vining, FoldSketch: Enriching Garments with Physically Reproducible Folds,* **ACM Transactions on Graphics (Proc. SIGGRAPH)***,* 2018.

J11. C. Li, H. Pan, Y. Liu, X. Tong, A. Sheffer, W. Wang. *BendSketch: Modeling Freeform Surfaces Through 2D Sketching*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 2017

J12. *G. Gori, A. Sheffer, N. Vining, E. Rosales,* N. Carr, T. Ju, *FlowRep: Descriptive Curve Networks for Free-Form Design Shapes***, ACM Transactions on Graphics (Proc. SIGGRAPH),** 2017

J13. *M. Bessmeltsev, N Vining,* A. Sheffer, *Gesture3D: Posing 3D Characters via Gesture Drawings,* **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)** *2016.*

J14. Z. Lun, V. Kaalogerakis, A. Sheffer, R. Wang, *Functionality Preserving Shape Style Transfer*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)** *2016.*

J15. L. Yi, V. Kim, D. Ceylan, *I-C. Shen*, M. Yan, H. Su, C. Lu, Q. Huang, A. Sheffer, L. Guibas, *A Scalable Active Framework for Region Annotation in 3D Shape Collections*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)** *2016.*

J16. A. Bartle, A. Sheffer, V. Kim, D. Kaufman, *N. Vining*, F. Berthouzoz, *Physics-Driven Pattern Adjustment for Direct 3D Garment Editing*, **ACM Transactions on Graphics (Proc. SIGGRAPH)** *2016*

J17. C. Zou, J. Cao, W. Ranaweera, I. Alhashim, P. Tan, A. Sheffer, H. Zhang, *Legible Compact Calligrams,* **ACM Transactions on Graphics (Proc. SIGGRAPH),** *2016*

J18. *M. Bessmeltsev, W. Chang, N Vining,* A. Sheffer, K. Singh*, Modeling Character Canvases from Cartoon Drawings*, **ACM Transactions on Graphics** *2015.*

J19. G.-P. Paille, N. Ray, P. Poulin, A. Sheffer, B. Levy, *Dihedral Angle-based Maps of Tetrahedral Meshes , **ACM Transactions on Graphics (Proc. SIGGRAPH), 2015.**

J20. *M. Livesu,* A. Sheffer, *N. Vining*, M.Tarini, *Practical Hex-Mesh Optimization via Edge-Cone Rectification*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 2015.

J21. H. Pan, Y. Liu, A. Sheffer, *N. Vining*, C.-J. Li, W. Wang, *Flow Aligned Surfacing of Curve Networks*, **ACM Transactions on Graphics (Proc. SIGGRAPH),** 2015.

J22. *B. Xu*, W. Chang*,* A. Sheffer, A. Bousseau, J.McCrae, K. Singh, *True2Form: 3D Curve Networks from 2D Sketches via Selective Regularization***, ACM Transactions on Graphics (Proc. SIGGRAPH),** Vol.33, No 4, 2014.

J23. Z. Lun, E. Kalogerakis, A. Sheffer, *Elements of Style: Learning Perceptual Shape Style Similarity*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 2015.

J24. *C. Ma, N. Vining,* S. Lefebvre, A. Sheffer, *Game Level Layout from Design Specification*, **Computer Graphics Forum (Proc. Eurographics),** 2014.

J25. *C. Ma*, H. Huang, A. Sheffer, E. Kalogerakis, R Wang, *Analogy-Driven 3D Style Transfer*, **Computer Graphics Forum (Proc. Eurographics),** 2014.

J26. L. Majerowicz, A. Shamir, A. Sheffer, H. H. Hoos, *Filling Your Shelves: Synthesizing Diverse Style-Preserving Artifact Arrangements*, **IEEE Transactions on Visualization and Computer Graphics**, Nov, 2013.

J27. *M. Livesu, N. Vining*, A. Sheffer , J. Gregson ,R. Scateni, *PolyCut: Monotone Graph-Cuts for PolyCube Base-Complex Construction*, **ACM Trans. on Graphics (Proc. SIGGRAPH Asia),** 32(6), 2013.

J28. S.-S. Huang, A. Shamir, C.-H. Shen, H. Zhang , A. Sheffer, S.-M. Hu, D. Cohen-Or, *Collections of Shapes via Quartet Analysis*, **ACM** *Transactions on Graphics (Proc. SIGGRAPH),* 2013

J29. *M. Bessmeltsev, C. Wang*, A Sheffer, K, Singh, *Design-Driven Quadrangulation of Closed 3D Curves*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia),** 31(4), 2012.

J30. *R. Brouet*, A. Sheffer, L. Boissieux, M.-P. Cani, *Design Preserving Garment Transfer*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 31(3), 2012. Video clip included in SIGGRAPH trailer.

J31. *C. Shao*, A. Bousseau, A. Sheffer, K. Singh, *CrossShade: Shading Concept Sketches Using Cross-Section Curves*, **ACM Transactions on Graphics, (Proc. SIGGRAPH)** 31(3), 2012. Image used for Proc. back cover.

J32. *J. Gregson*, A. Sheffer, E. Zhang, *All-Hex Mesh Generation via Volumetric PolyCube Deformation*, **Computer Graphics Forum, (Proc. SGP)**, 30(5), 2011.

J33. *R. Maharik, M. Bessmeltsev*, A Sheffer, A. Shamir, N. Carr, *Digital Micrography*, **ACM Transactions on Graphics, (Proc. SIGGRAPH)**, 30(3), 2011.

J34. *C. Robson, R. Maharik*, A. Sheffer, N. Carr, *Context-Aware Garment Modeling From Sketches*, **Computers & Graphics (Proc. SMI)**, 35(3), 604—613, 2011.

J35. M. Olson, R. Dyer, H. Zhang, A. Sheffer, *Point Set Silhouettes via Local Reconstruction*, **Computers & Graphics (Proc. SMI)**, 35(3), 2011.

J36. D. Rohmer, *T. Popa,* M.-P. Cani, S. Hahmann, A. Sheffer, *Animation Wrinkling: Augmenting Coarse Cloth Simulations with Realistic-Looking Wrinkles*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia),** 2010

J37. *T. Popa, I. South-Dickinson*, A. Sheffer, D. Bradley, W. Heidrich, *Globally Consistent Space-Time Reconstruction*, **Computer Graphics Forum (Proc. SGP),** 2010.

J38. D. Bradley, W. Heidrich, *T. Popa*, A. Sheffer, *High Resolution Passive Facial Performance Capture*, **ACM Trans. on Graphics (Proc. SIGGRAPH)**, 29(3), 2010

J39. *R. Mehra*, P. Tripathi, N. Mitra, A. Sheffer, *Visibility of Noisy Point Cloud Data*, **Computers and Graphics (Proc. SMI),** 2010.

J40. Z. Qian, A. Tagliasacchi, B. Chen, D. Cohen-Or, A. Sharf, A. Sheffer, H. Zhang, *Consensus Skeleton for Non-rigid Space-time Registration*, **Computer Graphics Forum (Proc. Eurographics),** 2010.

J41. *R. Mehra, Q. Zhou*, J. Long, A. Sheffer, A. Gooch, N. J. Mitra, *Abstraction of Man-Made Shapes*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)**, 2009.

J42. W.-L. Lu, K. P. Murphy, J. J. Little, A. Sheffer, *H. Fu, A Hybrid Conditional Random Field for Estimating the Underlying Ground Surface from Airborne LiDAR Data*, **IEEE Transactions on Geoscience and Remote Sensing**, 47(8/2), 2913-2922, 2009.

J43. *T. Popa, Q. Zhou*, D. Bradley, *V. Kraevoy, H. Fu,* A. Sheffer, W. Heidrich, *Wrinkling Captured Garments Using Space-Time Data-Driven Deformation*, **Computer Graphics Forum (Proc. Eurographics)**, 2009.

J44. *V. Kraevoy*, A. Sheffer, D. Cohen-Or, A. Shamir, *Non-homogeneous Resizing of Complex Models*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)**, 27(5), 2008.

J45. A. Sharf, D. Alcantara, T. Lewiner, C. Greif, A. Sheffer, N. Amenta, D. Cohen-Or, *Space-time Surface Reconstruction using Incompressible Flow*, **ACM Transactions on Graphics (Proc. SIGGRAPH Asia)**, 27(5), 2008 .

J46. R. Zhang, A. Sheffer, D. Cohen-Or, *Q. Zhou*, O. van Kaick, A. Tagliasacchi, *Deformation-Driven Shape Correspondence*, **Computer Graphics Forum (Proc. SGP)**, 2008.

J47. *H. Fu*, D. Cohen-Or, G. Dror, A. Sheffer, *Upright Orientation of Man-Made Objects*, **ACM Transaction on Graphics (Proc. SIGGRAPH)**, 27(3), 2008.

J48. D. Bradley, *T. Popa*, A. Sheffer, W. Heidrich, T. Boubekeur, *Markerless Garment Capture*, **ACM Transaction on Graphics (Proc. SIGGRAPH)**, 27(3), 2008.

J49. M. Kilian, S. Floery, Z. Chen, N. J. Mitra, A. Sheffer, H. Pottmann, *Curved Folding*, **ACM Transaction on Graphics (Proc. SIGGRAPH)**, 27(3), 2008.

J50. *T. Popa, D. Julius*, A. Sheffer, *Interactive and Linear Material Aware Deformations*, **International Journal of Shape Modeling**, 13(1), 73-100, 2007.

J51. N. Ray, W. C. Li, B. Levy, A. Sheffer, P. Alliez, *Periodic Global Parameterization*, **ACM Transactions on Graphics**, 25(4), 1460 – 1485, 2006.

J52. *V. Kraevoy*, A. Sheffer, *Mean-Value Geometry Encoding*, **International Journal of Shape Modeling**, 12(1), 2006

J53. P. Decaudin, *D. Julius*, J. Wither, L. Boissieux, A. Sheffer, M.-P. Cani, *Virtual Garments: A Fully Geometric Approach for Clothing Design*, **Computer Graphics Forum (Proc Eurographics),** 25(3), 25(3),2006.

J54. *D. Julius, V. Kraevoy*, A. Sheffer, *D-Charts: Quasi-Developable Mesh Segmentation*, **Computer Graphics Forum (Proc Eurographics)**, 24(3), 981-990, 2005.

J55. A. Sheffer, B. Lévy, M. *Mogilnitsky*, A, Bogomyakov, *ABF++: Fast and Robust Angle Based Flattening*, **ACM Transactions on Graphics**, 24(2), 311-330 2005.

J56. *V. Kraevoy*, A. Sheffer, *Cross-Parameterization and Compatible Remeshing of 3D Models*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 23(3), 861 – 869, 2004,

J57. A. Sheffer, C. Gotsman and N. Dyn, *Robust Spherical Parameterization of Triangular Meshes*, **Computing**, 72, 185-193, 2004.

J58. *R. Raab*, C. Gotsman, and A. Sheffer, *Virtual Woodwork: Making Toys from 3D Models*, **International Journal of Shape Modelling**, 10(1), 1-30, 2004.

J59. A. Sheffer, *Skinning 3D Meshes*, **Graphical Models**, 65(5), 274-285, 2003.

J60. *V. Kraevoy*, A. Sheffer, C. Gotsman, *Matchmaker: Constructing Constrained Texture Maps*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 22(3), 326-333, 2003.

J61. C. Gotsman, X. Gu, A. Sheffer, *Fundamentals of Spherical Parameterization for 3D Meshes*, **ACM Transactions on Graphics (Proc. SIGGRAPH)**, 22(3), 358-363, 2003.

J62. A. Üngör, A. Sheffer, R. B. Haber, and S.-H. Teng, *Layer based solutions for constrained spacetime meshing*, **Applied Numerical Mathematics**, 46(3-4), 425-443, 2003.

J63. A. Sheffer, E. de Sturler, *Smoothing an Overlay Grid to Minimize Linear Distortion in Texture Mapping*, **ACM Transactions on Graphics**, 21(4), 874-890, 2002.

J64. A. Ungor, A. Sheffer, *Pitching Tents in Space-Time: Mesh Generation for Discontinuous Galerkin Method*, **International Journal of Foundations of Computer Science**, 13(2), 201-221, 2002.

J65. A. Sheffer, A. Ungor, *Efficient Adaptive Meshing of Parametric Models,* **Journal of Computing and Information Science in Engineering**, 1(4), 366-375, 2001.

J66. A. Sheffer and E. de Sturler, *Parameterization of Faceted Surfaces for Meshing Using Angle Based Flattening*, **Engineering with Computers**, 17 (3), 326-337, 2001.

J67. A. Sheffer, *Model Simplification for Meshing Using Face Clustering*, **Computer-Aided Design (CAD)**, 33: 925-934, 2001.

J68. A. Sheffer, T. Blacker, M. Bercovier, *Virtual Topology Operators for Meshing*, **International Journal of Computational Geometry and Applications**, 10(3), 309-331, 2000.

J69. A. Sheffer, M. Bercovier, *Hexahedral Meshing of Non-Linear Volumes Using Voronoi Faces and Edges*, **International Journal for Numerical Methods in Engineering**, 49(1-2), 329-351, 2000.

J70. A. Sheffer, M. Etzion, A. Rappoport, M. Bercovier, *Hexahedral Mesh Generation Using the Embedded Voronoi Graph*, **Engineering with Computers**, 15, 248-262, 1999.

J71. O. Volpin, A. Sheffer, M. Bercovier, L. Joskowicz, *Mesh Simplification with Smooth Surface Reconstruction*, **Computer-Aided Design (CAD)**, 30, 875-882, 1998.

J72. A. Rappoport, A. Sheffer, M. Bercovier, *Volume Preserving Free Form Solids*, **IEEE Transactions on Visualization and Computer Graphics**, 2(1), 19-27, 1996.

Conferences

C1. *R. Gillette, C. Peters, N. Vining*, E. Edwards, A. Sheffer, *Real-time Dynamic Wrinkling of Coarse Animated Cloth*, **Proc. Symposium on Computer Animation (SCA)** , 2015.

C2. **S.** Pavanaskar, S. Pande, Y. Kwon, Z. Hu, A. Sheffer, S. McMains, *Energy-efficient vector field based toolpaths for CNC pocket machining*, **North American Manufacturing Research Conference (NAMRC)** 2015 **(outstanding paper award).**

C3. C. Öztireli, U. Uyumaz, T. Popa, A. Sheffer, M. Gross, *3D Modeling with a Symmetric Sketch*, **Proc. Sketch Based Interfaces and Modeling**, 2011

C4. *V. Kraevoy*, M. van de Panne, A. Sheffer, *Modeling from Contour Drawings*, **Proc. Sketch-Based Interfaces and Modeling**, 2009.

C5. W.-L. Lu, J. J. Little, A. Sheffer, *H. Fu, Deforestation: Extracting 3D Bare-Earth Surface from Airborne LiDAR Data*, **Canadian Conference on Computer and Robot Vision (CRV)**, *2008.*

C6. *V. Kraevoy, D. Julius,* A. Sheffer, *Model Composition from Interchangeable Components*, **Proc. IEEE Pacific Graphics**, 2007.

C7. *K. Rose,* A. Sheffer, J. Wither, M.-P. Cani, B.Thibert , *Developable Surfaces from Arbitrary Sketched Boundaries,* **Proc. Symposium on Geometry Processing (SGP),** 2007, 163-172.

C8. R. Gal, O. Sorkine, *T. Popa*, A. Sheffer, D. Cohen-Or, *3D Collage: Expressive Non-Realistic Modeling*, **Proc. Symposium on Non-Photorealistic Animation and Rendering (NPAR)**, *7-14,* 2007.

C9. *D. Julius, T. Popa*, A. Sheffer, *Material Aware Mesh Deformation*, **Proc. IEEE Shape Modelling International (SMI),** 2006,141-152.

C10. *V.Kraevoy*, A. Sheffer, *Template Based Mesh Completion*, **Proc. Symposium on Geometry Processing (SGP),** 13-22, 2005.

C11. *S.Saba*, I. Yavneh, C. Gotsman, A. Sheffer, *Practical Spherical Embedding of Manifold Triangle Meshes*, **Proc. IEEE Shape Modelling International (SMI),** 258-267, 2005.

C12. *O. Sifri*, A. Sheffer, C. Gotsman, *Geodesic-Based Surface Remeshing*, **Proc. International Meshing Roundtable**, 189-199, 2003.

C13. A Sheffer, J. Hart, *Seamster: Inconspicuous Low-Distortion Texture Seam Layout*, **IEEE Visualization (Vis'02)**, 291-298, 2002.

C14. A. Sheffer, *Spanning Tree Seams for Reducing Parameterization Distortion of Triangulated Surfaces*, **Proc. IEEE Shape Modelling International (SMI),** 61-66, 2002.

C15. J. Liesen, E. de Sturler, A. Sheffer, Y. Aydin, C. Siefert, *Preconditioners for Indefinite Linear Systems Arising in Surface Parameterization*, **Proc. International Meshing Roundtable**, 71-82, 2001.

C16. A. Sheffer, A. Ungor, *Efficient Adaptive Meshing of Parametric Models,* **Proc. ACM SIGGRAPH Symposium on Solid Modeling and Applications (Solid Modeling '01),** 59-70, 2001.

C17. A. Sheffer, E. de Sturler, *Surface Parameterization for Meshing by Triangulation Flattening.* **Proc. International Meshing Roundtable**, 161-172, 2000.

C18. A. Ungor, A. Sheffer, *Tent-Pitcher: A Meshing Algorithm for Space-Time Discontinuous Galerkin Methods,* **Proc. International Meshing Roundtable**, 111-122, 2000.

C19. A. Sheffer, M. Etzion, A. Rappoport, M. Bercovier, *Hexahedral Mesh Generation Using the Embedded Voronoi Graph,* **Proc. International Meshing Roundtable**, 347-364, 1998.

C20. A. Sheffer, T. Blacker, M. Bercovier, *Virtual Topology Operators for Meshing*, **Proc. International Meshing Roundtable**, 49-66, 1997.

C21. A. Sheffer, T. Blacker, J. Clements, M. Bercovier, *Virtual Topology Construction and Applications. **Geometric Modeling: Theory and Practice***, Springer-Verlag, 247-259, 1997.

C22. A. Rappoport, A. Sheffer, M. Bercovier, *Volume Preserving Free Form Solids*. ***Proc. ACM SIGGRAPH Symposium on Solid Modeling and Applications (Solid Modeling '95)***, 361-372, 1995.

Books:

B1. Sheffer, E. Praun, *K. Rose*, **Mesh Parameterization Methods and Their Applications**, *Now Publishers*, 2006, (also *Foundations and Trends® in Computer Graphics and Vision*, 2(2), 2006)

PATENTS

P1. *CY Shao*, A Bousseau, A Sheffer, K Singh , **Methods and systems for characterizing concept drawings and estimating three-dimensional information therefrom**, *US Patent 9,405,994*. 2016

P2. A Sheffer, *N Vining, M Livesu*, **Methods and systems for hex-mesh optimization via edge-cone rectification**, *US Patent App. 15/217,956*, 2016

P3. *R Brouet*, A Sheffer, MP Cani, L Boissieux, **Data processing method for transforming a first 3D surface suitable for coating a first object into a second 3D surface suitable for coating a second object, and associated computer program and processing device,** *US Patent 9,177,423,2015*

P4. A Sheffer, K Singh, A Bousseau, *W Chang, B Xu*, J McCrae ,**Methods and systems for estimating three-dimensional information from two-dimensional concept drawings**, US Patent App. 15/302,764,2015.

P5. A Sheffer, *N Vining, J Gregson, M Livesu***, Methods and systems for generating polycube segmentations from input meshes of objects,** *US Patent App. 9922458*, 2018

P6. *J Gregson*, A Sheffer, E Zhang**, Methods and systems for generating polycubes and all-hexahedral meshes of an object,** *US Patent App. 13/948,016*, 2013