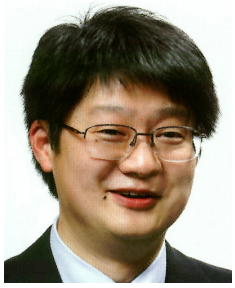
CURRICULUM VITAE (in April, 2020)

1 Professional Experience



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Professional Position:

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PERSONAL INFORMATION:

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RESEARCH INTERESTS:

- Computer Visualization
  - Scientific Visualization
  - Information Visualization
  - Visual Analytics
  - Modeling of Visual Perception
  - Geospatial Visualization
  - Mathematical Visualization
- Computer Graphics
  - Nonphotorealistic Rendering
  - Animaion
- Shape Modeling
  - 3D Mesh Processing

EDUCATIONAL BACKGROUND:

March 1997
Received Ph.D in science
from the University of Tokyo
Thesis title: Critical-Point-Based Modeling for Smooth Surfaces
(Ref. No. DD-109)

April 1994 – March 1997
Ph.D. course graduate student
Department of Information Science
Graduate School of Science
The University of Tokyo

April 1992 – March 1994
Master course graduate student
Department of Information Science
Graduate School of Science
The University of Tokyo

April 1988 – March 1992
Undergraduate student
Department of Information Science
Faculty of Science
The University of Tokyo

April 1984 – March 1987
High school student
Tokyo Metropolitan Toyama High School

PROFESSIONAL EXPERIENCE:

April, 2020 – present
Director of Research Center for Advanced Information Science and Technology (CAIST)
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April, 2014 – March, 2015
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April, 2011 – present
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Kyushu University, Japan

April, 2005 – April, 2014
Associate Professor
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University of Tokyo, Japan

October, 2002 – September, 2003
Visiting Associate Professor
Department of Computer Science and Engineering
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Associate Professor
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Graduate School of Arts and Sciences
University of Tokyo, Japan

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Associate Professor
Computer Center
Gunma University, Japan
April, 1997 – July, 1999
Assistant Professor
Department of Computer Science
Faculty of Engineering
Gunma University, Japan

2 List of Publications

A. Books and Edited Proceedings

A.1 Edited International Journal Issues

[II1] Jie Li, Shigeo Takahashi, and Robert P. Biuk-Aghai. Special Issue on VINCI 2017 Best Papers. *Journal of Computer Languages*, Vol. 54, 2019. DOI: 10.1016/j.cola.2019.100909.

[II2] Shixia Liu, Gerik Scheuermann, Shigeo Takahashi, Tim Dwyer, and Yingcai Wu. Guest Editors' Introduction: Special Section on the IEEE Pacific Visualization Symposium 2015. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 22, No. 7, pp. 1786–1787, 2016. DOI: 10.1109/TVCG.2016.2553858.

[II3] Ulrik Brandes, Hans Hagen, Shigeo Takahashi, and Xiaoru Yuan. Guest Editors' Introduction: Special Section on the IEEE Pacific Visualization Symposium 2014. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 21, No. 8, pp. 887–888, 2015. DOI: 10.1109/TVCG.2015.2442351.

A.2 Edited Proceedings

[IP1] Robert Biuk-Aghai, Jie Li, and Shigeo Takahashi, editors. *Proceedings of the 10th International Symposium on Visual Information Communication and Interaction (VINCI 2017)*. ACM Press, August 2017. (ISBN 978-1-4503-5292-5).

[IP2] Takayuki Itoh, Paolo Battoni, and Shigeo Takahashi, editors. *Proceedings of the 8th International Symposium on Visual Information Communication and Interaction (VINCI 2015)*. ACM Press, August 2015. (ISBN 978-1-4503-3482-2).

[IP3] Shixia Liu, Gerik Scheuermann, and Shigeo Takahashi, editors. *Proceedings of the 8th IEEE Pacific Visualization Symposium (PacificVis 2015)*. IEEE Computer Society Press, April 2015. (ISBN 978-1-4673-4879-7).

[IP4] Ulrik Brandes, Hans Hagen, and Shigeo Takahashi, editors. *Proceedings of the 7th IEEE Pacific Visualization Symposium (PacificVis 2014)*. IEEE Computer Society Press, March 2014. (ISBN 978-1-4799-2873-6).

A.3 Chapters in Books

[IB1] Shigeo Takahashi. Algorithms for Extracting Surface Topology from Digital Elevation Models. In Sanjay Rana, editor, *Topological Data Structures for Surfaces*, Chapter 3, pp. 31–51. John Wiley & Sons, Ltd., 2004. (ISBN 0-470-85151-1), DOI: 10.1002/0470020288.ch3, .

[IB2] Shigeo Takahashi. Numerical Calculation of the Orbital Invariant of Goryachev-Chaplygin and Lagrange Systems. In *Topological Modeling for Visualization*, Chapter 17, pp. 349–374. Springer, 1997. (ISBN 4-431-70200-8), DOI: 10.1007/978-4-431-66956-2.

B. Research Papers (Peer-Reviewed)

B.1 International Journal Articles

[IJ1] Shigeo Takahashi, Ken Maruyama, Takamasa Kawagoe an Hsiang-Yun Wu, Kazuo Misue, and Masatoshi Arikawa. Mental Map Preservation for Progressively Labeling Railway Networks. *International Journal of Art, Culture and Design Technologies*, Vol. 8, No. 1, pp. 31–50, 2019. DOI: 10.4018/IJACDT.2019010103, [Received Honorable Mention in EuroVis 2019].

[IJ2] Kazuyo Mizuno, Hsiang-Yun Wu, Shigeo Takahashi, and Takeo Igarashi. Optimizing Stepwise Animation in Dynamic Set Diagrams. *Computer Graphics Forum*, Vol. 38, No. 2, pp. 13–24, 2019. DOI: 10.1111/cgf.13668, .

[IJ3] Issei Fujishiro, Naoko Sawada, Masanori Nakayama, Hsiang-Yun Wu, Kazuho Watanabe, Shigeo Takahashi, and Makoto Uemura. TimeTubes: Visual Exploration of Observed Blazar Datasets. *Journal of Physics: Conference Series*, Vol. 1036, p. 012011, 2018. DOI: 10.1088/1742-6596/1036/1/012011, .

[IJ4] Hsiang-Yun Wu, Shigeo Takahashi, and Rie Ishida. Overlap-Free Labeling of Clustered Networks Based on Voronoi Tessellation. *Journal of Visual Languages and Computing*, Vol. 44, pp. 106–119, 2018. DOI: 10.1016/j.jvlc.2017.09.008 .

[IJ5] Hsiang-Yun Wu, Shigeo Takahashi, Hiroko Nakamura Miyamura, Satoshi Ohzahata, and Akihiro Nakao. Inferring Partial Orders of Nodes for Hierarchical Network Layout. *Journal of Imaging Science and Technology*, Vol. 60, No. 6, pp. 60407–1–60407–13(13), 2016. DOI: 10.2352/J.ImagingSci.Technol.2016.60.6.060407.

[IJ6] Makoto Uemura, Ryosuke Itoh, Longyin Xu, Masanori Nakayama, Hsiang-Yun Wu, Kazuho Watanabe, Shigeo Takahashi, and Issei Fujishiro. TimeTubes: Visualization of Polarization Variations in Blazars. *Galaxies*, Vol. 4, No. 3, p. 23, 2016. DOI: 10.3390/galaxies4030023, .

[IJ7] Kazuho Watanabe, Hsiang-Yun Wu, Shigeo Takahashi, and Issei Fujishiro. Asymmetric Biclustering with Constrained von Mises-Fisher Models. *Journal of Physics: Conference Series*, Vol. 699, p. 012018, 2016. DOI: 10.1088/1742-6596/699/1/012018, .

[IJ8] Makoto Uemura, Koji S. Kawabata, Shiro Ikeda, Keiichi Maeda, Hsiang-Yun Wu, Kazuho Watanabe, Shigeo Takahashi, and Issei Fujishiro. Data-Driven Approach to Type Ia Supernovae: Variable Selection on the Peak Luminosity and Clustering in Visual Analytics. *Journal of Physics: Conference Series*, Vol. 699, p. 012009, 2016. DOI: 10.1088/1742-6596/699/1/012009, .

[IJ9] Daisuke Sakurai, Osamu Saeki, Hamish Carr, Hsiang-Yun Wu, Takahiro Yamamoto, David Duke, and Shigeo Takahashi. Interactive Visualization for Singular Fibers of Functions $\boldsymbol{R}^3 \rightarrow \boldsymbol{R}^2$. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 22, No. 1, pp. 945–954, 2016. DOI: 10.1109/TVCG.2015.2467433, .

[IJ10] Hsiang-Yun Wu, Shigeo Takahashi, Daichi Hirono, Masatoshi Arikawa, Chun-Cheng Lin, and Hsu-Chun Yen. Spatially Efficient Design of Annotated Metro Maps. *Computer Graphics Forum*, Vol. 32, No. 3, pp. 261–270, 2013. DOI: 10.1111/cgf.12113, .

[IJ11] Fernando J. Wong and Shigeo Takahashi. Abstracting Images into Continuous Line Artistic Styles. *The Visual Computer*, Vol. 29, No. 6-8, pp. 729–738, 2013. DOI: 10.1007/s00371-013-0809-1, .

[IJ12] Hsiang-Yun Wu, Shigeo Takahashi, Chun-Cheng Lin, and Hsu-Chun Yen. Travel-Route-Centered Metro Map Layout and Annotation. *Computer Graphics Forum*, Vol. 31, No. 3, pp. 925–934, 2012. DOI: 10.1111/j.1467-8659.2012.03085.x, .

[IJ13] Fernando J. Wong and Shigeo Takahashi. A Graph-Based Approach to Continuous Line Illustrations with Variable Levels of Detail. *Computer Grahics Forum*, Vol. 30, No. 7, pp. 1931–1939, 2011. DOI: 10.1111/j.1467-8659.2011.02040.x, .

[IJ14] Shigeo Takahashi, Hsiang-Yun Wu, Seow Hui Saw, Chun-Cheng Lin, and Hsu-Chun Yen. Optimized Topological Surgery for Unfolding 3D Meshes. *Computer Graphics Forum*, Vol. 30, No. 7, pp. 2077–2086, 2011. DOI: 10.1111/j.1467-8659.2011.02053.x, .

[IJ15] Eunjung Ju, Myung Geol Choi, Minji Park, Jehee Lee, Kang Hoon Lee, and Shigeo Takahashi. Morphable Crowds. *ACM Transactions on Graphics*, Vol. 29, No. 5, 2010. Article No. 140, DOI: 10.1145/1866158.1866162, .

[IJ16] Sho Kurose and Shigeo Takahashi. Simulating Interactions Between Fluids and Unconstrained Rigid Bodies Using a Constraint-Based Formulation. *Computer Graphics and Geometry*, Vol. 12, No. 2, pp. 34–59, 2010.

[IJ17] Tatsuhiko Suzuki, Shigeo Takahashi, and Jason Shepherd. An Interior Surface Generation Method for All-Hexahedral Meshing. *Engineering with Computers*, Vol. 26, No. 3, pp. 303–316, 2010. DOI: 10.1007/s00366-009-0159-9.

[IJ18] Shigeo Takahashi, Issei Fujishiro, and Masato Okada. Applying Manifold Learning to Plotting Approximate Contour Trees. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 15, No. 6, pp. 1185–1192, 2009. DOI: 10.1109/TVCG.2009.119, .

[IJ19] Fernando J. Wong and Shigeo Takahashi. Flow-Based Automatic Generation of Hybrid Picture Mazes. *Computer Graphics Forum*, Vol. 28, No. 7, pp. 1975–1984, 2009. DOI: 10.1111/j.1467-8659.2009.01576.x, .

[IJ20] Shigeo Takahashi, Kenichi Yoshida, Taesoo Kwon, Kang Hoon Lee, Jehee Lee, and Sung Yong Shin. Spectral-Based Group Formation Control. *Computer Graphics Forum*, Vol. 28, No. 2, pp. 639–648, 2009. DOI: 10.1111/j.1467-8659.2009.01404.x, .

[IJ21] Taesoo Kwon, Kang Hoon Lee, Jehee Lee, and Shigeo Takahashi. Group Motion Editing. *ACM Transactions on Graphics*, Vol. 27, No. 3, 2008. Article No. 80, DOI: 10.1145/1360612.1360679, .

[IJ22] Shigeo Takahashi, Kenichi Yoshida, Kenji Shimada, and Tomoyuki Nishita. Occlusion-Free Animation of Driving Routes for Car Navigation Systems. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 12, No. 5, pp. 1141–1148, 2006. DOI: 10.1109/TVCG.2006.167, .

[IJ23] Shigeo Takahashi, Yuriko Takeshima, and Issei Fujishiro. Topological Volume Skeletonization and Its Application to Transfer Function Design. *Graphical Models*, Vol. 66, No. 1, pp. 24–49, 2004. DOI: 10.1016/j.gmod.2003.08.002, [Received the Elsevier Most Cited Paper Award for the Journal Graphical Models (2004-2006)], DOI: 10.1016/j.gmod.2007.02.001.

[IJ24] Ryutarou Ohbuchi, Akio Mukaiyama, and Shigeo Takahashi. A Frequency-Domain Approach to Watermarking 3D Shapes. *Computer Graphics Forum*, Vol. 21, No. 3, pp. 373–382, 2002. DOI: 10.1111/1467-8659.t01-1-00597, .

[IJ25] Shigeo Takahashi, Naoya Ohta, Hiroko Nakamura, Yuriko Takeshima, and Issei Fujishiro. Modeling Surperspective Projection of Landscapes for Geographical Guide-Map Generation. *Computer Grpahics Forum*, Vol. 21, No. 3, pp. 259–268, 2002. DOI: 10.1111/1467-8659.t01-1-00585, .

[IJ26] Ryutarou Ohbuchi, Yoshiyuki Kokojima, and Shigeo Takahashi. Blending Shapes by Using Subdivision Surfaces. *Computers and Graphics*, Vol. 25, No. 1, pp. 41–58, 2001. DOI: 10.1016/S0097-8493(00)00106-0, .

[IJ27] Issei Fujishiro, Taeko Azuma, Yuriko Takeshima, and Shigeo Takahashi. Volume Data Mining Using 3D Field Topology Analysis. *IEEE Computer Graphics and Applications*, Vol. 20, No. 5, pp. 46–51, 2000. DOI: 10.1109/38.865879, .

[IJ28] Shigeo Takahashi. Tolerance Constraints for Variational Design of Multiresolution Curves and Surfaces. *International Journal of Shape Modeling*, Vol. 6, No. 1, pp. 37–63, 2000. DOI: 10.1142/S0218654300000053.

[IJ29] Shigeo Takahashi. Variational Design of Curves and Surfaces Using Multiresolution Constraints. *The Visual Computer*, Vol. 14, No. 5/6, pp. 208–227, 1998. DOI: 10.1007/s003710050133, .

[IJ30] Shigeo Takahashi, Yoshihisa Shinagawa, and Tosiyasu L. Kunii. Continuous-Resolution-Level Constraints in Variational Design of Multiresolution Shapes. *The Visual Computer*, Vol. 14, No. 4, pp. 177–192, 1998. DOI: 10.1007/s003710050136, .

[IJ31] Shigeo Takahashi, Tetsuya Ikeda, Yoshihisa Shinagawa, Tosiyasu L. Kunii, and Minoru Ueda. Algorithms for Extracting Correct Critical Points and Constructing Topological Graphs from Discrete Geographical Elevation Data. *Computer Graphics Forum*, Vol. 14, No. 3, pp. 181–192, 1995. DOI: 10.1111/j.1467-8659.1995.cgf143_0181.x, .

[IJ32] Shigeo Takahashi and Tosiyasu L. Kunii. Manifold-based Multiple-viewpoint CAD: A Case Study of Mountain Guide-map Generation. *Computer-Aided Design*, Vol. 26, No. 8, pp. 622–631, 1994. DOI: 10.1016/0010-4485(94)90105-8, .

B.2 International Conference Papers

[IC1] Ken Maruyama, Shigeo Takahashi, Hsiang-Yun Wu, Kazuo Misue, and Masatoshi Arikawa. Scale-Aware Cartographic Displacement Based on Constrained Optimization. In *Proceedings of the 23rd International Conference on Information Visualisation (IV2019)*, pp. 74–80, Paris, France, July 2019. DOI: 10.1109/10.1109/IV.2019.00022, [Received a best paper award in IV2019].

[IC2] Yuka Yoshida, Ken Maruyama, Takamasa Kawagoe, Hsiang-Yun Wu, Masatoshi Arikawa, and Shigeo Takahashi. Progressive Annotation of Schematic Railway Maps. In *Proceedings of the 22th International Conference on Information Visualisation 2018 (IV2018)*, pp. 373–378, Salerno, Italy, July 2018. DOI: 10.1109/iV.2018.00070, .

[IC3] Yasuto Murakami, Takamasa Kawagoe, Michael Cohen, and Shigeo Takahashi. Depth-Enhanced Tag Cloud Maps. In *Proceedings of the 22th International Conference on Information Visualisation 2018 (IV2018)*, pp. 122–127, Salerno, Italy, July 2018. DOI: 10.1109/iV.2018.00031.

[IC4] Byoungkwon An, Ye Tao, Jianzhe Gu, Tingyu Cheng, Xiang Anthony Chen, Xiaoxiao Zhang, Wei Zhao, Youngwook Do, Shigeo Takahashi, Hsiang-Yun Wu, Teng Zhang, and Lining Yao. Thermorph: Democratizing 4D Printing of Self-Folding Materials and Interfaces. In *Proceedings of the 2018 ACM CHI Conference on Human Factors in Computing Systems (CHI '18)*, p. Paper 260 (12 pages), 2018. DOI: 10.1145/3173574.3173834, .

[IC5] Hsiang-Yun Wu, Shigeo Takahashi, Sheung-Hung Poon, and Masatoshi Arikawa. Introducing Leader Lines into Scale-Aware Consistent Labeling. In Michael P. Peterson, editor, *in Advances in Cartography and GIScience: Selections from the International Cartographic Conference 2017*, pp. 117–130, Washington D.C., USA, July 2017. Springer. DOI: 10.1007/978-3-319-57336-6_9, .

[IC6] Hsiang-Yun Wu, Shigeo Takahashi, Sheung-Hung Poon, and Masatoshi Arikawa. Scale-Adaptive Placement of Hierarchical Map Labels. In *Short Paper Proceedings of the 19th Eurographics Conference on Visualization (EuroVis2017)*, pp. 1–5, Barcelona, Spain, June 2017. DOI: 10.2312/eurovisshort.20171124, .

[IC7] Hsiang-Yun Wu, Yusuke Niibe, Kazuho Watanabe, Shigeo Takahashi, Makoto Uemura, and Issei Fujishiro. Making Many-to-Many Parallel Coordinate Plots Scalable by Asymmetric Biclustering. In *Notes Proceedings of the 10th IEEE Pacific Visualization Symposium (PacificVis2017)*, pp. 305–309, Seoul, Korea, April 2017. .

[IC8] Fumiya Sato, Hsiang-Yun Wu, Shigeo Takahashi, and Masatoshi Arikawa. Extracting Important Routes from Illustration Maps Using Kernel Density Estimation. In *Proceedings of International Symposium on Smart Graphics 2015*, Springer Lecture Notes in Computer Science, pp. 167–174, 2017. DOI: 10.1007/978-3-319-53838-9_14.

[IC9] Yuki Ohtaka, Shigeo Takahashi, Hsiang-Yun Wu, and Naoya Ohta. Using Mutual Information for Exploring Optimal Light Source Placements. In *Proceedings of International Symposium on Smart Graphics 2015*, Springer Lecture Notes in Computer Science, pp. 155–166, 2017. DOI: 10.1007/978-3-319-53838-9_13.

[IC10] Kouhei Yasuda, Shigeo Takahashi, and Hsiang-Yun Wu. Enhancing Infographics Based on Symmetry Saliency. In *Proceedings of the 9th International Symposium on Visual Information Communication and Interaction (VINCI2016)*, pp. 35–42, Dallas, TX, USA, September 2016. DOI: 10.1145/2968220.2968224, .

[IC11] Longyin Xu, Masanori Nakayama, Hsiang-Yun Wu, Kazuho Watanabe, Shigeo Takahashi, Makoto Uemura, and Issei Fujishiro. TimeTubes: Design of a Visualization Tool for Time-Dependent, Multivariate Blazar Datasets. In *Proceedings of the 2016 Nicograph International*, pp. 15–20, Hangzhou, China, September 2016. DOI: 10.1109/NicoInt.2016.3, .

[IC12] Rie Ishida, Shigeo Takahashi, and Hsiang-Yun Wu. Adaptive Blending of Multiple Network Layouts for Overlap-Free Labeling. In *Proceedings of the 20th International Conference on Information Visualisation 2016 (IV2016)*, pp. 15–20, Lisbon, Portugal, July 2016. DOI: 10.1109/iV.2016.25, .

[IC13] Hsiang-Yun Wu, Sheung-Hung Poon, Shigeo Takahashi, Masatoshi Arikawa, Chun-Cheng Lin, and Hsu-Chun Yen. Designing and Annotating Metro Maps with Loop Lines. In *Proceedings of the 19th International Conference on Information Visualisation 2015 (IV2015)*, pp. 9–14, Barcelona, Spain, July 2015. DOI: 10.1109/iV.2015.14, .

[IC14] Rie Ishida, Shigeo Takahashi, and Hsiang-Yun Wu. Interactively Uncluttering Node Overlaps for Network Visualization. In *Proceedings of the 19th International Conference on Information Visualisation 2015 (IV2015)*, pp. 200–205, Barcelona, Spain, July 2015. DOI: 10.1109/iV.2015.44, .

[IC15] Kazuho Watanabe, Hsiang-Yun Wu, Yusuke Niibe, Shigeo Takahashi, and Issei Fujishiro. Biclustering Multivariate Data for Correlated Subspace Mining. In *Proceedings of the 8th IEEE Pacific Visualization Symposium (PacificVis 2015)*, pp. 287–294, Hangzhou, China, April 2015. DOI: 10.1109/PACIFICVIS.2015.7156389, .

[IC16] Yi Gao, Hsiang-Yun Wu, Kazuo Misue, Kazuyo Mizuno, and Shigeo Takahashi. Visualizing Bag-of-Features Image Categorization Using Anchored Maps. In *Proceedings of the 7th International Symposium on Visual Information Communication and Interaction (VINCI2014)*, pp. 39–48, Sydney, Australia, August 2014. DOI: 10.1145/2636240.2636858, .

[IC17] Koto Nohno, Hsiang-Yun Wu, Kazuho Watanabe, Shigeo Takahashi, and Issei Fujishiro. Spectral-Based Contractible Parallel Coordinates. In *Proceedings of the 18th International Conference on Information Visualization (IV2014)*, pp. 7–12, Paris, France, July 2014. DOI: 10.1109/IV.2014.60, .

[IC18] Mizuno Kazuyo, Hsiang-Yun Wu, and Shigeo Takahashi. Manipulating Bilevel Feature Space for Category-Aware Image Exploration. In *Proceedings of the 7th IEEE Pacific Visualization Symposium (PacificVis 2014)*, pp. 217–224, Yokohama, Japan, March 2014. DOI: 10.1109/PacificVis.2014.58, .

[IC19] Hsiang-Yun Wu, Shigeo Takahashi, Chun-Cheng Lin, and Hsu-Chun Yen. Voronoi-Based Label Placement for Metro Maps. In *Proceedings of International Conference on Information Visualisation 2013 (IV2013)*, pp. 96–101, London, UK, July 2013. DOI: 10.1109/IV.2013.11, .

[IC20] Yuriko Takeshima, Issei Fujishiro, Shigeo Takahashi, and Toshiyuki Hayase. A Topologically-Enhanced Juxtaposition Tool for Hybrid Wind Tunnel. In *Proceedings of the 6th IEEE Pacific Visualization Symposium (PacificVis 2013)*, pp. 113–120, Sydney, Australia, March 2013. DOI: 10.1109/PacificVis.2013.6596135, .

[IC21] Daichi Hirono, Hsiang-Yun Wu, Masatoshi Arikawa, and Shigeo Takahashi. Constrained Optimization for Disoccluding Geographic Landmarks in 3D Urban Maps. In *Proceedings of the 6th IEEE Pacific Visualization Symposium (PacificVis 2013)*, pp. 17–24, Sydney, Australia, March 2013. DOI: 10.1109/PacificVis.2013.6596123, .

[IC22] Fernando J. Wong and Shigeo Takahashi. Hierarchical Design of Continuous Line Illustrations. In *Proceedings of the 8th International Conference on Computer Graphics Theory and Applications (GRAPP 2013)*, pp. 131–138, Balcelona, Spain, February 2013. DOI: 10.5220/0004232701310138, .

[IC23] Chongke Bi, Daisuke Sakurai, Shigeo Takahashi, and Kenji Ono. Interactive Control of Mesh Topology in Quadrilateral Mesh Generation Based on 2D Tensor Fields. In *Proceedings of the 8th International Symposium on Visual Computing (ISVC2012)*, volume 7432 of *Springer Lecture Notes in Computer Science*, pp. 726–735, Rythmnon, Crete, Greece, July 2012. DOI: 10.1007/978-3-642-17289-2_32, .

[IC24] Chongke Bi, Shigeo Takahashi, and Issei Fujishiro. Degeneracy-Aware Interpolation of 3D Diffusion Tensor Fields. In *Proceedings of SPIE Conference on Visualization and Data Analysis 2012 (VDA2012)*, volume 8294 of *SPIE Proceedings*, Burlingame, CA, USA, January 2012. DOI: 10.1117/12.908117, .

[IC25] Chun-Cheng Lin, Sheung-Hung Poon, Shigeo Takahashi, Hsiang-Yun Wu, and Hsu-Chun Yen. One-and-a-half-side Boundary Labeling. In *Proceedings of the 5th Annual International Conference on Combinatorial Optimization and Applications (COCOA2011)*, volume 6831 of *Springer Lecture Notes in Computer Science*, pp. 387–398, Zhangjiajie, China, August 2011. DOI: 10.1007/978-3-642-22616-8_30, .

[IC26] Hsiang-Yun Wu, Shigeo Takahashi, Chun-Cheng Lin, and Hsu-Chun Yen. A Zone-Based Approach for Placing Annotation Labels on Metro Maps. In *Proceedings of the 11th International Symposium on Smart Graphics (Smart Graphics 2011)*, volume 6185 of *Springer Lecture Notes in Computer Science*, pp. 91–102, Bremen, Germany, July 2011. DOI: 10.1007/978-3-642-22571-0_8, .

[IC27] Chongke Bi, Shigeo Takahashi, and Issei Fujishiro. Interpolating 3D Diffusion Tensors in 2D Planar Domain by Locating Degenerate Lines. In *Proceedings of the 6th International Symposium on Visual Computing (ISVC2010)*, volume 6453 of *Springer Lecture Notes in Computer Science*, pp. 328–337, Las Vegas, NV, USA, November-December 2010. DOI: 10.1007/978-3-642-17289-2_32, .

[IC28] Jun Kobayashi, Chongke Bi, and Shigeo Takahashi. Sophisticated Construction and Search of 2D Motion Graphs for Synthesizing Videos. In *Proceedings of the 4th Pacific-Rim Symposium on Image and Video Technology (PSIVT2010)*, pp. 487–494, Singapore, November 2010. DOI: 10.1109/PSIVT.2010.88, .

[IC29] Shinichi Nakazawa, Sho Kasahara, and Shigeo Takahashi. A Visually-Enhanced Approach to Watermarking 3D Models. In *Proceedings of the 6th International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIH-MSP 2010)*, pp. 110–113, Darmstadt, Germany, October 2010. DOI: 10.1109/IIHMSP.2010.35, .

[IC30] Kenichi Yoshida, Shigeo Takahashi, Hiroaki Ono, Issei Fujishiro, and Masato Okada. Perceptually-Guided Design of Nonperspectives Through Pictorial Depth Cues. In *Proceedings of 7th International Conference on Computer Graphics, Imaging and Visualization (CGiV2010)*, pp. 173–178, Sydney, Australia, August 2010. DOI: 10.1109/CGIV.2010.33, .

[IC31] Kairi Mashio, Kenichi Yoshida, Shigeo Takahashi, and Masato Okada. Automatic Blending of Multiple Perspective Views for Aesthetic Composition. In *Proceedings of the 10th International Symposium on Smart Graphics (Smart Graphics 2010)*, volume 6133 of *Springer Lecture Notes in Computer Science*, pp. 220–231, Banff, Canada, June 2010. DOI: 10.1007/978-3-642-13544-6_21, .

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B.3 Monographs in Books or Collections

[IM1] Osamu Saeki, Shigeo Takahashi, Daisuke Sakurai, Hsiang-Yun Wu, Keisuke Kikuchi, Hamish Carr, David Duke, and Takahiro Yamamoto. Visualizing Multivariate Data using Singularity Theory. In *The Impact of Applications on Mathematics (Proceedings of Forum Math-for-Industry 2013)*, pp. 51–65. Springer, 2014. DOI: 10.1007/978-4-431-54907-9_4, .

[IM2] Shigeo Takahashi, Issei Fujishiro, Yuriko Takeshima, and Chongke Bi. Previewing Volume Decomposition Through Optimal Viewpoints. In H. Hagen, editor, *Scientific Visualization: Interactions, Features, Metaphors*, volume 2 of *Dagstuhl Follow-Ups Series*, pp. 346–359. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2011. DOI: 10.4230/DFU.Vol2.SciViz.2011.346, .

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[IM4] Issei Fujishiro, Yuriko Takeshima, Shigeo Takahashi, and Yumi Yamaguchi. Topologically-Accentuated Volume Rendering. In F. H. Post, G. M. Nielson, and G.-P. Bonneau, editors, *Data Visualization: The State of the Art*, pp. 95–108. Kluwer Academic Publishers, 2003. DOI: 10.1007/978-1-4615-1177-9_7, .

[IM5] Yoshihisa Shinagawa, Tosiyasu L. Kunii, Anatoly T. Fomenko, and Shigeo Takahashi. Coding of Object Surfaces Using Atoms. In *Scientific Visualization: Advances and Challenges*, pp. 309–332. Academic Press, 1993. .

C. Survey Papers (Peer-Reviewed)

C.1 Surveys

[IS1] Osamu Saeki and Shigeo Takahashi. Visual Data Mining Based on Differential Topology: A Survey. *Pacific Journal of Mathematics for Industry*, Vol. 6, No. 1, pp. 47–56, 2014. DOI: 10.1186/s40736-014-0004-y, .

[IS2] Charl P. Botha, Bernhard Preim, Arie Kaufman, Shigeo Takahashi, and Anders Ynnerman. From Individual to Population: Challenges in Medical Visualization. In Charles D. Hansen, Min Chen, Christopher R. Johnson, Arie E. Kaufman, and Hans Hagen, editors, *Scientific Visualization (Mathematics and Visualization)*. Springer, 2014. ISBN: 978-1-4471-6496-8, DOI: 10.1007/978-1-4471-6497-5_23, .

3 Social Activities

Affiliated Academic Societies (International)

September, 1992	–	Present	ACM (Association for Computing Machinery)
September, 1994	–	Present	IEEE Computer Society
January, 2002	–	Present	Eurographics

Affiliated Academic Societies (Domestic)

December, 1992	–	Present	Information Processing Society of Japan
September, 1997	–	Present	The Institute of Electronics, Information and Communication Engineers
April, 2005	–	Present	Visualization Society of Japan
September, 2013	–	Present	Japan Cartographers Association

Academic Activities (International)

Editorial Boards for International Journals

February, 2011 – January, 2015
Associate Editor of
IEEE Transactions on Visualization and Computer Graphics
Introduction is available at DOI: 10.1109/TVCG.2011.62

January, 2015 – Present
Associate Editor of
International Journal *Computational Visual Media*
Editorial board avaialble at this page

July, 2016 – December, 2019
Associate Editor of
International Journal *Computer Graphics Forum*
Introduction is available at DOI: 10.1111/cgf.13094

Chairs of International Conferences

Poster Co-Chair of the *6th IEEE Pacific Visualization Symposium*
(IEEE PacificVis 2013)
Programme Co-Chair of the *7th IEEE Pacific Visualization Symposium*
(IEEE PacificVis 2014)
Programme Co-Chair of the *8th IEEE Pacific Visualization Symposium*
(IEEE PacificVis 2015)
Programme Co-Chair of the *8th International Symposium on*
Visual Information Communication and Interaction (VINCI 2015)
Conference Co-Chair of
the Topology-Based Methods in Data Analysis and Visualization 2017
(TopoInVis 2017)
Programme Co-Chair of the STAR track of
the 19th EG/VGTC International Conference on Visualization
(EuroVis 2017)
Programme Co-Chair of the *10th International Symposium on*
Visual Information Communication and Interaction (VINCI 2017)

Programme Committee Members for International Conferences

IEEE Visualization (2005-2007, 2010-2012, 2015-2018)
Eurographics/IEEE VGTC Symposium on Visualization (EuroVis) (2009, 2011-2013,2016-2018)
IEEE Pacific Visualization Symposium (IEEE PacificVis) (2008-2013,2016-2019)
SPIE Visualization and Data Analysis (VDA) (2013-2019)
International Symposium on Visual Information Communication and Interaction (VINCI) (2014,2016,2018-2020)
International Symposium on Big Data Visual Analytics (BDVA) (2015-2018)
International Conference on Visual Media (CVM) (2018-2019)
International Symposium on Graph Drawing and Network Visualization (GD) (2018)
International Symposium on Smart Graphics (2007-2011,2014)
Pacific Conference on Computer Graphics and Applications (PG) (2001,2008-2014)
Workshop on Topology-Based Methods in Data Analysis and Visualization (TopoInVis) (2013,2015,2019)
International Conference on Information Visualization Theory and Applications (IVAPP) (2011-2013)
ACM SIGGRAPH Asia: Technical Sketches & Posters (2009-2011,2014)
IEEE/Eurographics International Workshop on Volume Graphics (2003,2006-2008)
Geometric Modeling and Processing (2006,2008,2012)
IEEE International Conference on Shape Modeling and Applications (2006-2008)
CAD/Graphics (2007)
IADIS MCCSIS Computer Graphics, Visualization, Computer Vision, and Image Processing (2008-2010)

4 Awards

July, 2019
IV2019 Best Paper Award
Given by the Organizers of the
23rd International Conference on Information Visualisation (IV2019)
Optimizing Stepwise Animation in Dynamic Set Diagrams
(co-authored with Ken Maruyama, Hsiang-Yun Wu, Kazuo Misue, and Masatoshi Arikawa)

June, 2019
Honorable Mention
Given by the Organizers of the
21st Eurographics/VGTC Conference on Visualization (EuroVis2019)
Scale-Aware Cartographic Displacement Based on Constrained Optimization
(co-authored with Kazuyo Mizuno, Hsiang-Yun Wu, and Takeo Igarashi)

June, 2014
2013 TVCG Best Associate Editor Award
Given by IEEE Transactions on Visualization and Comptuer Graphics
DOI: 10.1109/TVCG.2014.2310791

October, 2013
Commendation of Jury for KAKENHI (Grants-in-Aid for Scientific Research) in 2013
Given by JSPS (Japan Society of the Promotion of Science)

March, 2010
The First Prize for CG International Papers in 2009
Given by the Society of Art and Science
Applying Manifold Learning to Plotting Approximate Contour Trees
IEEE Transactions on Visualization and Computer Graphics, Vol. 15, No. 6, pp. 1185-1192, November/December 2009
(co-authored with Issei Fujishiro and Masato Okada)

April, 2009
1st BEST SCCG 2009 Presentation Award
Given by the Organizers of the
25th Spring Conference on Computer Graphics (SCCG2009)
Simulating Interactions Between Fluids and Unconstrained Rigid Bodies Using a Constraint-Based Formulation
(co-authored with Sho Kurose)

May, 2007
IPSJ Best Paper Award in 2006
Given by IPSJ (Information Society of Japan)

Design of Multi-dimensional Transfer Functions with Topological Attributes (in Japanese)
(co-authored with Yuriko Takeshima and Issei Fujishiro)

January, 2007

Most Cited Paper Award for the International Journal *Graphical Models* (2004-2006)
Given by *Elsevier*

Topological Volume Skeletonization and its Application to Transfer Function Design
(co-authored with Yuriko Takeshima and Issei Fujishiro)
DOI: 10.1016/j.gmod.2007.02.001

June, 1997

EDM Award (2nd Best Paper by a Young Scientist) in *Computer Graphics International 1997*
Given by Computer Graphics Society

Curve and Surface Design using Multiresolution Constraints
(co-authored with Yoshihisa Shinagawa and Tosiyasu L. Kunii)

September, 1996

Encouragement Award in the *52th National Convention of IPSJ*
Given by IPSJ (Information Processing Society of Japan

Multiscale Design of Curves and Surfaces using Constraints of Differential Topology
(in Japanese)
(co-authored with Yoshihisa Shinagawa)