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## RESEARCH INTERESTS

- Computer graphics, user interface, geometry processing, volumetric modeling, texture synthesis, geometric modeling, mesh editing, animation, image editing

## ACADEMIC BACKGROUND

- **Research Scientist, CyberAgent AI Lab** (April 2022 –)
- **Assistant Professor, National Institute of Informatics** (September 2014 – March 2022)
- **Postdoctoral Fellow, ETH Zürich** (April 2014 – August 2014)  
Supervisor: Olga Sorkine-Hornung
- **JSPS Postdoctoral Fellow** (April 2012 – March 2014)  
Supervisor: Olga Sorkine-Hornung
- **Ph.D., The University of Tokyo** (April 2009 – March 2012)  
Advisor: Takeo Igarashi  
Thesis title: Volumetric Modeling of Natural Objects with Compact and Consistent Representations
- **M.Sc., The University of Tokyo** (April 2007 – March 2009)  
Advisor: Takeo Igarashi  
Thesis title: Lapped Solid Textures: Filling a Model with Anisotropic Textures
- **B.Sc., The University of Tokyo** (September 2006 – March 2007)  
Advisor: Takeo Igarashi  
Thesis title: Sketch Based Interface for Designing Volumetric Vector Fields

## JOURNAL PUBLICATIONS

- **Kenshi Takayama**. *Compatible Intrinsic Triangulations*. ACM Transactions on Graphics, 41(4) (proceedings of ACM SIGGRAPH), Article No.57, 2022.
- **Kenshi Takayama**. *Dual Sheet Meshing: An Interactive Approach to Robust Hexahedralization*. Computer Graphics Forum, 38(2) (proceedings of Eurographics), pp.37–48, 2019.
- Giorgio Marcias, **Kenshi Takayama**, Nico Pietroni, Daniele Panozzo, Olga Sorkine-Hornung, Enrico Puppo, and Paolo Cignoni. *Data-Driven Interactive Quadrangulation*. ACM Transactions on Graphics, 34(4) (proceedings of ACM SIGGRAPH), Article No.65, 2015.
- **Kenshi Takayama**, Daniele Panozzo, Olga Sorkine-Hornung. *Pattern-Based Quadrangulation for N-Sided Patches*. Computer Graphics Forum, 33(5) (proceedings of Eurographics Symposium on Geometry Processing), pp.177–184, 2014.
- **Kenshi Takayama**, Alec Jacobson, Ladislav Kavan, Olga Sorkine-Hornung. *A Simple Method for Correcting Facet Orientations in Polygon Meshes Based on Ray Casting*. Journal of Computer Graphics Techniques, 3(4), pp.53–63, 2014.
- **Kenshi Takayama**, Daniele Panozzo, Alexander Sorkine-Hornung, Olga Sorkine-Hornung. *Sketch-Based Generation and Editing of Quad Meshes*. ACM Transactions on Graphics, 32(4) (proceedings of ACM SIGGRAPH), Article No.97, 2013.
- Nobuyuki Umetani, **Kenshi Takayama**, Jun Mitani, Takeo Igarashi. *A Responsive Finite Element Method to Aid Interactive Geometric Modeling*. IEEE Computer Graphics and Applications, 31(5), pp.43–53, 2011.
- **Kenshi Takayama**, Ryan Schmidt, Karan Singh, Takeo Igarashi, Tamy Boubekeur, Olga Sorkine. *GeoBrush: Interactive Mesh Geometry Cloning*. Computer Graphics Forum, 30(2) (proceedings of Eurographics), pp.613–622, 2011.
- **Kenshi Takayama**, Olga Sorkine, Andrew Nealen, Takeo Igarashi. *Volumetric Modeling with Diffusion Surfaces*. ACM Transactions on Graphics, 29(6) (proceedings of ACM SIGGRAPH Asia), Article No.180, 2010.
- Takashi Ijiri, **Kenshi Takayama**, Hideo Yokota, Takeo Igarashi. *ProcDef: Local-to-global Deformation for Skeleton-free Character Animation*. Computer Graphics Forum, 28(7) (proceedings of Pacific Graphics), pp.1821–1828, 2009.
- **Kenshi Takayama**, Takashi Ashihara, Takashi Ijiri, Takeo Igarashi, Ryo Haraguchi, Kazuo Nakazawa. *A sketch-based interface for modeling myocardial fiber orientation that considers the layered structure of the ventricles*. The Journal of

Physiological Sciences, 58(7), pp.487–492, 2008.

- Takashi Ijiri, Takashi Ashihara, Takeshi Yamaguchi, **Kenshi Takayama**, Takeo Igarashi, Tatsuo Shimada, Tsunetoyo Namba, Ryo Haraguchi, Kazuo Nakazawa. *A procedural method for modeling the Purkinje fibers of the heart*. The Journal of Physiological Sciences, 58(7), pp.481–486, 2008.
- **Kenshi Takayama**, Makoto Okabe, Takashi Ijiri, Takeo Igarashi. *Lapped Solid Textures: Filling a Model with Anisotropic Textures*. ACM Transactions on Graphics, 27(3) (proceedings of ACM SIGGRAPH), Article No.53, 2008.

## CONFERENCE PAPERS, TALKS, POSTERS

- Yuki Koyama, **Kenshi Takayama**, Nobuyuki Umetani, Takeo Igarashi. *Real-Time Example-Based Elastic Deformation*. Symposium on Computer Animation (SCA), pp. 19–24, 2012.
- Nobuyuki Umetani, Jun Mitani, Takeo Igarashi, **Kenshi Takayama**. *Designing Custommade Metallophone with Concurrent Eigenanalysis*. New Interfaces for Musical Expression++, 2010.
- **Kenshi Takayama**, Takeo Igarashi. *Layered Solid Texture Synthesis from a Single 2D Exemplar*. ACM SIGGRAPH 2009 Posters.
- Makoto Okabe, **Kenshi Takayama**, Takashi Ijiri, Takeo Igarashi. *Light Shower: A Poor Man's Light Stage Built with an Off-the-shelf Umbrella and Projector*. ACM SIGGRAPH 2007 Sketches.
- **Kenshi Takayama**, Takeo Igarashi, Ryo Haraguchi, Kazuo Nakazawa. *A sketch-based interface for modeling myocardial fiber orientation*. Smart Graphics, pp. 1–9, 2007.

## TECHNICAL REPORTS

- **Kenshi Takayama**, Alec Jacobson, Ladislav Kavan, Olga Sorkine-Hornung. *Consistently Orienting Facets in Polygon Meshes by Minimizing the Dirichlet Energy of Generalized Winding Numbers*. ETH Zurich, 2014.
- **Kenshi Takayama**, Daniele Panozzo, Alexander Sorkine-Hornung, Olga Sorkine-Hornung. *Robust and Controllable Quadrangulation of Triangular and Rectangular Regions*. ETH Zurich, 2013.

## AWARDS, SCHOLARSHIPS, FELLOWSHIPS

- JSPS Postdoctoral Fellowship for Research Abroad: April 2012 – March 2014
- JSPS Fellowship DC1: April 2009 – March 2012
- NICOGRAPH International CG Awards: March 2009

## RESEARCH VISITS

- **Dynamic Graphics Project (DGP), University of Toronto** (August 2011 – November 2011)  
Host: Prof. Karan Singh  
Funding: Overseas Visit Program, Graduate School of Information Science and Technology, The University of Tokyo
- **VLG group, New York University** (March 2010 – September 2010)  
Host: Prof. Olga Sorkine  
Funding: JSPS Excellent Young Researchers Overseas Visit Program
- **VLG group, New York University** (March 2009 – June 2009)  
Host: Prof. Olga Sorkine

## INVITED TALKS

- *Sketch-based interfaces for computer graphics content creation*  
JSPS UK/Japan Symposium on Computer Graphics and Virtual Reality (November 2014)
- *Interactive 3D Modeling: Surfaces and Volumes*  
Autodesk Research, hosted by Ryan Schmidt (November 2011)
- *Interactive 3D Modeling: Surfaces and Volumes*  
University of Toronto, hosted by Prof. Karan Singh (September 2011)
- *Volumetric Modeling of Internal Textures and Structures*  
University of Manitoba, hosted by Prof. James Young (August 2011)
- *Volumetric Modeling of Internal Textures and Structures*  
University of Calgary, hosted by Prof. James Young (June 2010)
- *Volumetric Modeling of Internal Textures and Structures*  
Harvard University, hosted by Prof. Hanspeter Pfister (May 2010)
- *3D Modeling of Internal Structures*  
New York University, hosted by Prof. Olga Sorkine (March 2009)

## ACADEMIC SERVICE

- **International Program Committee:**  
Eurographics: 2015, 2017, 2018, 2019, 2021, 2022  
Eurographics Short Papers: 2013  
Pacific Graphics: 2016, 2022  
Symposium on Geometry Processing: 2016, 2018, 2019, 2020, 2021, 2022  
Computer Graphics International: 2019  
Shape Modeling International: 2014, 2015, 2016  
Expressive: 2016  
Virtual Reality Software and Technology: 2014, 2018, 2019  
CAD/Graphics: 2015, 2017, 2021
- **Reviewer:**  
ACM SIGGRAPH  
ACM SIGGRAPH Asia  
Eurographics  
Eurographics Short Papers  
Computer Graphics Forum  
IEEE Transactions on Visualization and Computer Graphics  
IEEE Transactions on Multimedia  
IEEE Computer Graphics and Applications  
Shape Modeling International  
Pacific Graphics  
Graphics Interface  
Virtual Reality Software and Technology  
The Visual Computer  
Computer-Aided Design  
Graphical Models  
CAD and Applications  
CAD/Graphics  
Computers & Graphics  
Graphical Models  
IEICE Transactions  
Journal of Computer Science and Technology  
Journal of Zhejiang University-SCIENCE C  
Transactions on Systems, Man, and Cybernetics–Part A

## WORK EXPERIENCE

- **Research Assistant** (October 2008 – February 2009)  
JST ERATO Igarashi Design Interface Project, Japan
- **Chief Developer** (April 2007 – December 2007)  
Information-technology Promotion Agency (IPA) Exploratory Software Project, Japan

## REFERENCES

- **Olga Sorkine-Hornung** (Postdoc supervisor, 2012–2014)  
Assistant Professor  
Department of Computer Science  
ETH Zurich  
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- **Takeo Igarashi** (Undergraduate and graduate research advisor, 2006–2012)  
Professor  
Department of Computer Science  
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