Minhyuk Sung

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Research Interests

3D Machine Learning, Geometry Processing, Computer Graphics, Computer Vision.

Education

2013 - 2019 | Ph.D. in Computer Science,
Stanford University
Stanford, CA, USA
Dissertation: **Learning and exploring the compositional structure of 3D data**
Advisor: Leonidas Guibas

2008 - 2010 | Master of Science in Computer Science,
Korea Advanced Institute of Science and Technology (KAIST)
Daejeon, South Korea
Thesis: **A Spectral Approach to Shape Matching Using a Heat Kernel Function**
Advisor: Sung Yong Shin

2004 - 2008 | Bachelor of Science in Computer Science,
Korea Advanced Institute of Science and Technology (KAIST)
Daejeon, South Korea
Top Rank in Computer Science Department

Employment

Assistant Professor — Jan 2021 - Present
School of Computing, **KAIST**, Daejeon, Republic of Korea

Research Scientist — Oct 2019 - Dec 2020
Adobe Research, San Jose, CA, USA

Research Intern — Jun 2017 - Sep 2017
Autodesk Research, San Francisco, CA, USA

Research Intern — Jun 2016 - Sep 2016
Adobe Research, Seattle, WA, USA

Research Intern — Jun 2015 - Sep 2015
Google, Mountain View, CA, USA

Research Intern — Jun 2014 - Sep 2014
Google, Mountain View, CA, USA

Researcher — Mar 2010 - Jul 2013
Imaging Media Research Center (IMRC)
Korea Institute of Science and Technology (KIST), Seoul, South Korea

Publications

1. **DeformSyncNet: Deformation Transfer via Synchronized Shape Deformation Spaces**
   Minhyuk Sung*, Zhenyu Jiang*, Panos Achlioptas, Niloy J. Mitra, Leonidas J. Guibas
   (* Equal contribution)
   SIGGRAPH Asia 2020 (To appear)

2. **Deformation-Aware 3D Shape Embedding and Retrieval**
   Mikaela Angelina Uy, Jingwei Huang, **Minhyuk Sung**, Tolga Birdal, Leonidas Guibas
   ECCV 2020

3. **Neural Geometric Parser for Single Image Camera Calibration**
   Jinwoo Lee, **Minhyuk Sung**, Hyunjoon Lee, Junho Kim
   ECCV 2020

4. **Pix2Surf: Learning Parametric 3D Surface Models of Objects from Images**
   Jiahui Lei, Srinath Sridhar, Paul Guerrero, **Minhyuk Sung**, Niloy Mitra, Leonidas Guibas
   ECCV 2020

5. **Learning 3D Part Assembly from a Single Image**
   Yichen Li*, Kaichun Mo*, Lin Shao, **Minhyuk Sung**, Leonidas Guibas
   (* Equal contribution)
   ECCV 2020

6. **Supervised Fitting of Geometric Primitives to 3D Point Clouds**
   Lingxiao Li*, **Minhyuk Sung***, Anastasia Dubrovina, Li Yi, and Leonidas Guibas
   (* Equal contribution)
   CVPR 2019 (Oral)

7. **GSPN: Generative Shape Proposal Network for 3D Instance Segmentation in Point Cloud**
   Li Yi, Wang Zhao, He Wang, **Minhyuk Sung**, and Leonidas Guibas
   CVPR 2019

8. **Deep Functional Dictionaries: Learning Consistent Semantic Structures on 3D Models from Functions**
   Minhyuk Sung, Hao Su, Ronald Yu, and Leonidas Guibas
   NeurIPS 2018

9. **Learning Fuzzy Set Representations of Partial Shapes on Dual Embedding Spaces**
   Minhyuk Sung, Anastasia Dubrovina, Vladimir G. Kim, and Leonidas Guibas
   SGP 2018 (Symposium on Geometry Processing)

10. **ComplementMe: Weakly-Supervised Component Suggestions for 3D Modeling**
    Minhyuk Sung, Hao Su, Vladimir G. Kim, Siddhartha Chaudhuri, and Leonidas Guibas
    SIGGRAPH Asia 2017
    Featured in an ACM SIGGRAPH press release: [Link 1] [Link 2]

11. **Data-Driven Structural Priors for Shape Completion**
    Minhyuk Sung, Vladimir G. Kim, Roland Angst, and Leonidas Guibas
    SIGGRAPH Asia 2015

12. **Image Unprojection for 3D Surface Reconstruction: A Triangulation-based Approach**
Min-Hyuk Sung, Hwasup Lim, Hyoung-Gon Kim, and Sang Chul Ahn
IEEE International Conference on Image Processing (ICIP) 2013

13. **Finding the M-best Consistent Correspondences between 3D Symmetric Objects**
Min-Hyuk Sung and Junho Kim
Computers & Graphics, Feb.-Apr. 2013.

14. **A Triangulation-Invariant Method for Anisotropic Geodesic Map Computation on Surface Meshes**
Sang Wook Yoo, Joon-Kyung Seong, **Min-Hyuk Sung**, Sung Yong Shin and Elaine Cohen
IEEE Transactions on Visualization and Computer Graphics (TVCG), Oct. 2012.

Honors, Invited Talks, and Scholarships

2019	Doctoral Consortium ICCV 2019
2019	Doctoral Consortium SIGGRAPH 2019
2013	Doctoral Study Abroad Scholarship Recipient Honors Korea Foundation for Advanced Studies (KFAS)
2008-2010	National Science and Engineering Graduate Research Scholarship (S2-2008-000-00006-2) Korea Student Aid Foundation (KOSAF)
2004-2008	National Science and Engineering Scholarship Korea Student Aid Foundation (KOSAF)
2005-2008	Merit-based Scholarship Korea Advanced Institute of Science and Technology (KAIST)

Teaching Experience

2018 Spring	Guest Lecturer **CS233 Geometric and Topological Data Analysis**, Stanford
2016 Fall	Course Assistance **CS268 Geometric Algorithms**, Stanford
2015 Fall	Course Assistance **CS348A Computer Graphics: Geometric Modeling**, Stanford
2009 Spring	Teaching Assistance **CS202 Problem Solving**, KAIST

Academic Activities

Reviewer	SIGGRAPH, SIGGRAPH Asia, Eurographics, Pacific Graphics, NeurIPS, ICML, ICLR, CVPR, 3DV, WACV, ACCV, ACM TOG, IEEE TVCG, CGF, TVC, C&G, IEEE TPAMI, IEEE RA-L.

References

Leonidas Guibas	Professor, Stanford University	guibas@cs.stanford.edu
Vladimir Kim	Senior Research Scientist, Adobe Research	vokim@adobe.com
Siddhartha Chaudhuri	Assistant Professor, IIT Bombay Senior Research Scientist, Adobe Research	sidch@cse.iitb.ac.in sidch@adobe.com
Hao (Richard) Zhang	Professor, Simon Fraser University	haoz@cs.sfu.ca