# Minhyuk Sung

Assistant Professor, School of Computing, KAIST

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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

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

## Teaching Experience

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

## Academic Activities

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| Reviewer | SIGGRAPH, SIGGRAPH Asia, Eurographics, Pacific Graphics,<br>NeurIPS, ICLR, CVPR, 3DV, WACV, ACCV,<br>ACM TOG, IEEE TVCG, CGF, TVC, C&G,<br>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      sidch@cse.iitb.ac.in
         Senior Research Scientist, Adobe Research  sidch@adobe.com

Hao (Richard) Zhang  Professor, Simon Fraser University     haoz@cs.sfu.ca