Binh-Son Hua

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Academic Qualifications

Ph.D. School of Computing, National University of Singapore, Singapore, 2015.
B.E. (Hons.). Computer Science and Engineering, Ho Chi Minh City University of Technology, Vietnam, 2008.

Publications   Google Scholar DBLP

1. Quang-Hieu Pham, Mikaela Angelina Uy, <u>Binh-Son Hua</u>, Duc Thanh Nguyen, Gemma Roig, and Sai-Kit Yeung,
   LCD: Learned Cross-Domain Descriptors for 2D-3D Matching, **AAAI 2020** *(to appear)*   *(Oral presentation)*
2. Mikaela Angelina Uy, Quang-Hieu Pham, <u>Binh-Son Hua</u>, Duc Thanh Nguyen, and Sai-Kit Yeung,
   Revisiting Point Cloud Classification: A New Benchmark Dataset and Classification Model on Real-World Data,
   ICCV 2019.   *(Oral presentation)*
3. ShellNet: Efficient Point Cloud Convolutional Neural Networks using Concentric Shells Statistics,
   Zhiyuan Zhang, <u>Binh-Son Hua</u>, and Sai-Kit Yeung, **ICCV 2019**.   *(Oral presentation)*
4. Rotation Invariant Convolutions for 3D Point Clouds Deep Learning,
   Zhiyuan Zhang, <u>Binh-Son Hua</u>, David W. Rosen, and Sai-Kit Yeung, **3DV 2019**.
5. <u>Binh-Son Hua</u>, Adrien Gruson, Victor Petitjean, Matthias Zwicker, Derek Nowrouzezahrai, Elmar Eisemann, and
   Toshiya Hachisuka, A Survey on Gradient-Domain Rendering, Eurographics 2019 State of the Art Reports.
6. Quang-Hieu Pham, Duc Thanh Nguyen, <u>Binh-Son Hua</u>, Gemma Roig, and Sai-Kit Yeung,
   JSIS3D: Joint Semantic-Instance Segmentation of 3D Point Clouds with Multi-Task Pointwise Networks and
   Multi-Value Conditional Random Fields, **CVPR 2019**.   *(Oral presentation)*
7. Quang-Hieu Pham, <u>Binh-Son Hua</u>, Duc Thanh Nguyen, and Sai-Kit Yeung,
   Real-time Progressive 3D Semantic Segmentation for Indoor Scene, **WACV 2019**.
8. Rui Ma, Akshay Gadi Patil, Matthew Fisher, Manyi Li, Sören Pirk,
   <u>Binh-Son Hua</u>, Sai-Kit Yeung, Xin Tong, Leonidas Guibas, Hao Zhang,
   Language-Driven Synthesis of 3D Scenes from Scene Databases, **SIGGRAPH Asia 2018**.
9. <u>Binh-Son Hua</u>, Minh-Khoi Tran, and Sai-Kit Yeung,
   Pointwise Convolutional Neural Networks, **CVPR 2018**.
10. Adrien Gruson, <u>Binh-Son Hua</u>, Nicolas Vibert, Derek Nowrouzezahrai, and Toshiya Hachisuka,
    Gradient-Domain Volumetric Photon Density Estimation, **SIGGRAPH 2018**.   *(Impact factor 4.29)*
11. <u>Binh-Son Hua</u>, Adrien Gruson, Derek Nowrouzezahrai, and Toshiya Hachisuka,
    Gradient-Domain Photon Density Estimation, **Eurographics 2017**.
12. <u>Binh-Son Hua</u>, Duc Thanh Nguyen, Lap-Fai Yu, and Sai-Kit Yeung,
    A Robust 3D-2D Interactive Tool for Scene Segmentation and Annotation, **IEEE TVCG 2017**.   *(Impact factor 3.78)*
13. <u>Binh-Son Hua</u>, Quang-Hieu Pham, Duc Thanh Nguyen, Minh-Khoi Tran, Lap-Fai Yu, and Sai-Kit Yeung,
    SceneNN: a Scene Meshes Dataset with aNNotations, **3DV 2016**.   *(Best Paper Honorable Mention)*
14. Duc Thanh Nguyen, <u>Binh-Son Hua</u>, Minh-Khoi Tran, Quang-Hieu Pham, and Sai-Kit Yeung,
    A Field Model for Repairing 3D Shapes, **CVPR 2016**.   *(Spotlight presentation)*
15. Ramanpreet Pahwa, Minh Do, Tian Tsong Ng, and <u>Binh-Son Hua</u>,
    Calibration of Depth Cameras Using Denoised Depth Images, **ICIP 2014**.
16. Li Shen, Chuohao Yeo, and <u>Binh-Son Hua</u>,
    Intrinsic Image Decomposition Using a Sparse Representation of Reflectance, **TPAMI 2013**.   *(Impact factor 8.329)*
17. <u>Binh-Son Hua</u>, Imari Sato, and Kok-Lim Low,
    Direct and Progressive Reconstruction of Dual Photography Images, **ICIP 2013**.
18. <u>Binh-Son Hua</u>, Tian-Tsong Ng, and Kok-Lim Low,
    Reconstruction of Depth and Normals from Interreflections, **ICIP 2013**.   *(Oral presentation)*
19. <u>Binh-Son Hua</u> and Kok-Lim Low,
    Interactive Motion Deblurring Using Light Streaks, **ICIP 2011**.
20. Lei Wang, <u>Binh-Son Hua</u>, and Xueqing Li,
    Adaptive Energy Diffusion for Blind Inverse Halftoning, **PCM 2010**.

Courses/Tutorials/Workshops/Posters

21. Duc Thanh Nguyen, Quang-Hieu Pham, and <u>Binh-Son Hua</u>,
    Creating and Understanding 3D Annotated Scene Meshes, **SIGGRAPH Asia 2019 Courses**.
22. <u>Binh-Son Hua</u>, Adrien Gruson, Matthias Zwicker, and Toshiya Hachisuka,
    Light Transport Simulation in the Gradient Domain, **SIGGRAPH Asia 2018 Courses**.
23. <u>Binh-Son Hua</u>, Duc Thanh Nguyen, Lap-Fai Yu, Sai-Kit Yeung, and Daniela Rus,
    Creating Annotated Scene Meshes for Training and Testing Robot Systems, **ICRA Tutorial 2018**.
24. Zhiyuan Zhang, <u>Binh-Son Hua</u>, Duc Thanh Nguyen, Lap-Fai Yu, Sai-Kit Yeung, and Daniela Rus,
    Creating and Understanding 3D Annotated Scene Meshes, **IROS Tutorial 2018**.
25. Quang-Hieu Pham, <u>Binh-Son Hua</u>, Lap-Fai Yu, Duc Thanh Nguyen, and Sai-Kit Yeung,
    SHREC'18: RGB-D Object to CAD Retrieval, **Eurographics Workshop on 3D Object Retrieval 2018**.
26. <u>Binh-Son Hua</u>, Quang-Trung Truong, Minh-Khoi Tran, Quang-Hieu Pham, Lap-Fai Yu, Duc Thanh Nguyen, and
    Sai-Kit Yeung, SHREC'17: RGB-D to CAD Retrieval with ObjectNN Dataset,
    Eurographics Workshop on 3D Object Retrieval 2017.
27. <u>Binh-Son Hua</u> and Kok-Lim Low,
    Guided path tracing using clustered virtual point lights, **SIGGRAPH Asia 2015 Posters Program**.

Invited Talks

3D Scenes: Understanding and Rendering   Huawei Tokyo Research Center, Japan   Sep 2019

Professional Activities

<u>Program committee</u>: SIGGRAPH Asia 2019 Courses, VISAPP 2020.
<u>Reviewer</u>: AAAI 2020, CVPR 2020-2019, ICCV 2019, 3DV 2019; VR 2020-2018; Pacific Graphics 2019-2017; Graphical Models 2018; CVIU 2018; Eurographics 2017; MAKE 2018; PLOS ONE 2016; WSCG 2016; CGI 2015.
<u>External reviewer</u>: TOG 2019-2018; PAMI 2018; IROS 2018; Eurographics 2019-2018; SIGGRAPH Asia 2018-2017, 2015; SIGGRAPH 2016; Pacific Graphics 2016; 3DV 2017-2015; TCSVT 2017-2016; ACCV 2016; VCIP 2017, Interacting with Computers 2017.

Work Experience

Project Assistant Professor	The University of Tokyo	Feb 2019 - present
Postdoctoral Researcher	The University of Tokyo	Feb 2018 - Jan 2019
Postdoctoral Researcher	Singapore University of Technology and Design	Dec 2016 - Jan 2018
Postdoctoral Researcher	Singapore University of Technology and Design	Jun 2015 - Jan 2016
Research Assistant	National University of Singapore	Jan 2015 - Apr 2015
Teaching Assistant	National University of Singapore	Feb 2013 - Dec 2014
Intern	Institute for Infocomm Research, Singapore	Mar 2011 - Aug 2012
Intern	National Institute of Informatics (NII), Japan	Jul 2010 - Dec 2010
Intern	G3 Lab, National University of Singapore	Jun 2008 - Dec 2008
Intern	National University of Singapore	Aug 2007 - Dec 2007

Teaching Experience

Teaching Assistant	Advanced Computer Animation		Jan 2015
	3D Modeling and Animation	Feedback	Jan 2015
	Software Systems Design	Feedback	Aug 2014, Aug 2013
	Programming Methodology	Feedback	Jan 2014
	Data Structures and Algorithms I	Feedback	Jan 2013
	Software Engineering		Jan 2013
	JavaScript, HTML, C++ programming		Aug 2014, Aug 2013
	(at National Junior College, Singapore)		
Guest Speaker	Digital Photogrammetry Workshop, SUTD		Jan 2018
	3D Scene Understanding, SUTD		Sep 2017
	The Making of SceneNN, SUTD		Jul 2017
	Fluid Simulation, NUS		Mar 2015
	HTML5 and JavaScript, NUS		Sep 2014

| Tutor | Graphics Rendering Techniques | Jan 2012, Jan 2011, Jan 2010 |
| | General Purpose Computation on GPU | Aug 2011 |

Co-supervised Students

Pham Quang Hieu	PhD student, SUTD, 2015-present	3D scene understanding
Le Hoang Quyen	Master thesis, 2014	Real-time caustics rendering
Cui Yingchao	Bachelor thesis, 2013	Photon mapping
Ana-Delia Sambotin	Master thesis, 2012	Interreflection reconstruction

Awards

Best paper honorable mention	International Conference on 3D Vision	Oct 2016
PhD research scholarship	National University of Singapore	Jan 2009 - Dec 2012
Second runner-up	Samsung Mobile Games 2005, Vietnam	Jun 2005 - Nov 2005

Language Proficiency

| Japanese | Japanese Language Proficiency Test (top level N1) | Jul 2016 |
| English | TOEFL 99, IELTS Academic 7.5 | Dec 2007, Jul 2007 |

Chinese (Mandarin, Cantonese, Teochew, almost native), Vietnamese (native) and French (beginner).

Other Activities

Graphics developer	Ephere Inc.	May 2016 - Jun 2016
Student volunteer	SIGGRAPH Asia 2009, Yokohama, Japan	Dec 2009
Software developer	VietCore Co., HCMC, Vietnam	Mar 2008 - Jun 2008
Intern	FPT Software Solution, HCMC, Vietnam	Jul 2006 - Oct 2006
Game developer	FPT Mobile, HCMC, Vietnam	Feb 2006

Programming Skills

TensorFlow, Chainer, PyTorch, C/C++, CUDA, OpenGL, Python, HTML5/JavaScript, OpenCV, Qt, Unity, Maya, Blender.