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RESEARCH INTERESTS

My research interests include **computational imaging**, **optics**, **hyperspectral imaging**, **BRDF acquisition**, and **computer graphics**. Specifically, I have developed various camera systems and algorithms for high-dimensional and high-resolution imaging system. Also I exploited **deep neural network** to learn **hyperspectral imaging** with **compressive sensing** and image **super-resolution** for stereo system. My recent research developed a learning-based hyperspectral imaging system using **diffractive optics**.

EDUCATION

09/2016–Present **KAIST, PhD Student in Computer Science**
09/2014–08/2016 **KAIST, M.S in Computer Science**
– Thesis: Multisampling Compressive Video Spectroscopy
03/2010–08/2014 **KAIST, B.S in Computer Science**

PUBLICATIONS

International Journals:

[J1] **Daniel S. Jeon**, Seung-Hwan Baek, Shinyoung Yi, Qiang Fu, Xiong Dun, Wolfgang Heidrich, Min H. Kim. "Compact Snapshot Hyperspectral Imaging with Diffracted Rotation," ACM Transactions on Graphics (TOG), presented at **SIGGRAPH** 2019, 37(6), pp. 268:1–12, 2018 **(SCI-IF=6.89)**

[J2] **Daniel S. Jeon**, Inchang Choi, Min H. Kim (2016), "Multisampling Compressive Video Spectroscopy," Computer Graphics Forum (CGF), 35(2), May 12, 2016, pp. 467-477, presented at **EUROGRAPHICS** 2016 **(SCI-IF=2.84)**

[J3] Seung-Hwan Baek, **Daniel S. Jeon**, Xin Tong, Min H. Kim. "Simultaneous acquisition of polarimetric svbrdf and normals," ACM Transactions on Graphics (TOG), presented at **SIGGRAPH** Asia 2018, 37(6), pp. 268:1–12, 2018 **(SCI-IF=6.89)**

[J4] Joo Ho Lee, Adrian Jarabo, **Daniel S. Jeon**, Diego Gutierrez, Min H. Kim." Practical multiple scattering for rough surfaces," ACM Transactions on Graphics (TOG), presented at **SIGGRAPH** Asia 2018, 37(6), pp. 275:1–15, 2018 **(SCI-IF=6.89)**

[J5] Dongmin Keum, Kyung-Won Jang, **Daniel S. Jeon**, Charles S. Hwang, Elke K. Buschbeck, Min H. Kim, Ki-Hun Jeong. "Xenos peckii vision inspires an ultrathin digital camera," **Light: Science and Applications**, 2018 **(SCI-IF=14.52)**

[J6] Inchang Choi, **Daniel S. Jeon**, Giljoo Nam, Diego Gutierrez, Min H. Kim (2017), "High-Quality Hyperspectral Reconstruction Using a Spectral Prior," ACM Transactions on Graphics (TOG), presented at **SIGGRAPH** Asia 2017 36(6), Nov. 27-30, 2017, pp. 218:1–13 **(SCI-IF=6.89)**

International Conference Proceedings:

[C1] **Daniel S. Jeon**, Seung-Hwan Baek, Inchang Choi, Min H. Kim (2018), "Enhancing the Spatial Resolution of Stereo Images using a Parallax Prior," Proc. IEEE Computer Vision and Pattern Recognition (**CVPR** 2018) Salt Lake City, USA, June 18, 2018

[C2] Inseung Hwang, **Daniel S. Jeon**, Min H. Kim (2020), "Single-shot Acquisition of Cylindrical Mesostructure Normals using Diffuse Illumination," Proc. International Conference on Computer Vision Theory and Applications (VISAPP 2020) Valletta, Malta, February 27–29, 2020

[C3] Hyeonjoong Jang, **Daniel S. Jeon**, Min H. Kim (2019), " Fast Omnidirectional Depth Densification," Proc. International Symposium on Visual Computing (ISVC 2019, Oral) Lake Tahoe, Nevada, USA, October 7–9, 2019

[C4] Dongmin Keum, **Daniel S. Jeon**, Charles S. H. Hwang, Elke K. Buschbeck (2016), " Ultrathin Camera Inspired by Visual System Of Xenos Peckii," Proc. IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2016) Shanghai, China, 2016

[C5] Dongmin Keum, **Daniel S. Jeon**, Min H. Kim, Ki-Hun Jeong (2015), " Ultrathin Camera Inspired by Visual System Of Xenos Peckii," Proc. IEEE International Conference on Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS 2015) Anchorage, Alaska, USA, Jun. 21, 2015

AWARDS

- **2018 Naver Ph.D. Fellowship**, Naver
- **2016 Master's Thesis Award**, Korea Computer Graphics Society

RESEARCH PROJECTS

2018-Present	**Time-of-Flight**, SK Hynix & Development of high-resolution time-of-flight camera system for depth measurement.
2017-2018	**Compact Hyperspectral Imaging**, Samsung Science & Technology Foundation, Healthcare Edion ultra-thin spectral camera for smart glass.
2017-Present	**Lensless Imaging**, SK Hynix, Imaging with lensless sensor and light modulation pattern.
2016-2017	**Synthetic Defocus**, SK Hynix, Development of re-focusing algorithm for dual camera.
2015-2016	**Super-resolution**, SK Hynix, Development of super resolution algorithm for array camera.
2016	**High-Quality Face Scanning**, EVR Studio, Created digital human for VR games.
2015-2016	**Collaborative Photography,**, KAIST Center for Mobile Software Platform, Developing applications for mobile software platform.
2013-2015	**Depth from a Mobile Camera**, Global Frontier Projects (CISS), developed a depth-from-defocus method for a mobile camera.

PATENTS

US Patent:

[1] Min Hyuk Kim, **Daniel S. Jeon**, "Hyperspectral imaging spectroscopy method using kaleidoscope and system therefor", U.S. Patent App.: 15/637,884, published in Jun. 29, 2017.

Korea Patents:

[2] Ki-Hun Jeong, Myeong-Su Ahn, Min Hyuk Kim, **Daniel S. Jeon**, "Spectral Apparatus Incorporating Tunable Spectral Filter with Multiple Resonances, and Method for Acquiring Spectral Information Thereof", KR Patent App. : 10-2020-0035039, published in Mar. 23, 2020.

[3] Min Hyuk Kim, **Daniel S. Jeon**, "Lensless Hyperspectral Imaging Method and Apparatus Therefor", KR Patent App. : 10-2019-0071347, published in Jun. 17, 2019.

[4] Min Hyuk Kim, **Daniel S. Jeon**, "Stereo Super-ResolutionImaging Method using Deep Convolutional Networks and Apparatus Therefor", KR Patent App. : 10-2083721-0000, published in Feb. 25, 2020.

[5] Min Hyuk Kim, **Daniel S. Jeon**, "Hyperspectral Imaging Spectroscopy Method Using Kaleidoscope and System Therefor", KR Patent App. : 10-1915883-0000, registered in Sep. 31, 2018.

REFERENCES

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