

## Jaeheung Surh

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CONTACT INFORMATION	NAVER Green Factory, 6 Buljeong-ro Bundang-gu, Seongnam-si, Gyeonggi-do 13561 Republic of Korea	<a href="mailto:jaeheungsurh@gmail.com">jaeheungsurh@gmail.com</a> Website: <a href="http://jaeheungs.github.io">jaeheungs.github.io</a> Google Scholar: <a href="#">Jaeheung Surh</a>
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Image Processing</li><li>• Deep Learning</li><li>• Computational Photography</li></ul>	
WORK EXPERIENCE	<p><b>Clova AI Research (OCR), NAVER Corp</b>, Seongnam, Korea</p> <p><i>Research Engineer</i>, March 2019 – Present</p> <ul style="list-style-type: none"><li>• Development of computer vision and image processing algorithms for OCR solutions</li><li>• Development of deep learning models for OCR solutions</li><li>• Development of lightweight deep learning models</li></ul> <p><b>Korea Institute of Science and Technology (KIST), Center of Human-centered Interaction for Coexistence (CHIC)</b>, Seoul, Korea</p> <p><i>Researcher</i>, April 2017 – March 2019</p> <ul style="list-style-type: none"><li>• Development of a high volume data transfer network framework for interactive and cooperative experience in networked VR</li><li>• Development of computer vision and deep learning solutions to aid in VR QoE</li></ul>	
EDUCATION	<p><b>KAIST</b>, Daejeon, Korea</p> <p>M.S., Electrical Engineering, Mar 2015 – Feb, 2017</p> <ul style="list-style-type: none"><li>• Thesis: “Fast and Robust Depth from Focus using Ring Difference Filter”</li><li>• Advisor: Prof. In So Kweon</li><li>• Area of Study: Computer Vision</li></ul> <p><b>KAIST</b>, Daejeon, Korea</p> <p>B.S., Electrical and Electronic Engineering, Sept 2011 – Feb 2015</p> <ul style="list-style-type: none"><li>• Thesis: “Multi-Threading for Accelerated Belief Propagation on Bipartite Graphs”</li><li>• Emphasis on computer science and network programming</li><li>• Early graduation (1 semester)</li></ul>	
RESEARCH EXPERIENCE	<p><b>Clova AI Research</b>, Seoul, Korea</p> <p><i>Research Engineer</i>, Clova AI Research (OCR) March 2019 – Present</p> <ul style="list-style-type: none"><li>• Researched new computer vision solutions for document analysis and OCR.</li><li>• Researched novel deep learning training methods.</li><li>• Researched efficient deep learning model representations and inference methods.</li></ul> <p><b>Human-Centered Interaction for Coexistence Project</b>, Seoul, Korea</p> <p><i>Researcher</i>, CHIC April 2017 – March 2019</p> <ul style="list-style-type: none"><li>• Researched new computer vision solutions to aid in VR QoE.</li><li>• Researched novel synchronization protocols to aid in networked multimedia QoE.</li></ul> <p><b>National Core Research Center (NCRC)</b>, Daejeon, Korea</p> <p><i>Researcher</i>, Personal Plug and Play DigiCar Center Aug 2015 – Feb 2017</p> <ul style="list-style-type: none"><li>• Researched new camera systems for future vehicles.</li></ul>	

INTERNATIONAL JOURNALS

1. Hae-Gon Jeon\*, **Jaehung Surh\***, Sunghoon Im, and In So Kweon, “Ring Difference Filter for Fast and Noise Robust Depth from Focus,” *IEEE Transactions on Image Processing (TIP)*, August 2019.

INTERNATIONAL CONFERENCES

1. Tae-Young Lee, Eunmi Lee, **Jaehung Surh**, Joong-Jae Lee, Bum-Jae You, “Balanced Clock Skew Compensation for Immersive Networked Interactions Based on Inter Media Synchronization Level,” *In Proc. of the IEEE Computer science and Electronic Engineering Conference (CEEC)* [**Oral Presentor**], September 2018.
2. **Jaehung Surh**, Hae-Gon Jeon, Hyowon Ha, Sunghoon Im and In So Kweon, “Noise Robust Depth from Focus using a Ring Difference Filter,” *In Proc. of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* – 29% acceptance rate) [**Spotlight Presentation – 5% of submissions**], July 2017.
3. Bokyung Lee, Jiwoo Hong, **Jaehung Surh** and Daniel Saakes, “Ori-mandu: Korean Dumpling into Whatever Shape You Want,” *In Proc. of the ACM SIGCHI Conference on Designing Interactive Systems (DIS)* – 22% acceptance rate) [**Pictorial**], June 2017.
4. Bokyung Lee, Jiwoo Hong, **Jaehung Surh** and Daniel Saakes, “Ori-mandu: Korean Dumpling into Whatever Shape You Want,” *In Proc. of the ACM CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI)* – 25% acceptance rate) [**Video Showcase**], May 2017.

OTHER PUBLICATIONS

1. **Jaehung Surh**, Hae-Gon Jeon, Hyowon Ha, Sunghoon Im and In So Kweon, “Fast Depth from Defocus with Your Mobile Phone for Synthetic Defocus”, *In Proc. of the 28th Workshop on Image Processing and Image Understanding (IPIU)*, Feb 2016.

INVITED TALKS

- “Fast and Noise Robust Depth from Focus using Ring Difference Filter with Your Mobile Phone,” (**Naver D<sup>2</sup>**), YouTube video: <https://bit.ly/RDFNaver>, Sept 2017.

PATENTS

1. APPARATUS AND METHOD FOR EXTRACTING INFORMATION OF INTEREST BASED ON DOCUMENT IMAGE, 2021, <https://doi.org/10.8080/1020190104577>
2. METHOD AND APPARATUS FOR OPERATING DYNAMIC NETWORK SERVICE BASED ON LATENCY, 2020, <https://doi.org/10.8080/1020190049152>
3. DYNAMIC NETWORK CONFIGURATION AND SERVER EXTENSION SYSTEM AND METHOD, 2020, <https://doi.org/10.8080/1020190049151>
4. METHOD AND APPARATUS FOR ESTIMATING DEPTH USING RING DIFFERENCE FILTER, 2018, <https://doi.org/10.8080/1020170091717>

SKILLS

- Languages (by fluency): English, Korean
- Programming Languages (by fluency): Python, C/C++, MATLAB, C#, L<sup>A</sup>T<sub>E</sub>X, JAVA
- Experience with Tensorflow, PyTorch, and MXNet
- Experience with Linux and socket programming
- Experience with Unity (C#) and VR development
- Computer hardware enthusiast