

Jong-Beom Jeong

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EDUCATION

Sungkyunkwan University (SKKU), Seoul, Korea <i>Ph.D. in Computer Science Education (advisor: Prof. Eun-Seok Ryu)</i>	Sep. 2019 – Feb. 2025 GPA: 4.25 / 4.5
Gachon University, Seongnam, Korea <i>B.S. in Computer Engineering (Major), Business Administration (Minor)</i>	Mar. 2015 – Aug. 2018 GPA: 4.02 / 4.5

EXPERIENCE

Kunsan National University (KSNU), Gunsan, Korea <i>Assistant Professor, Department of Computer Science and Information Engineering</i> Research on intelligent immersive media	Sep. 2025 – Present kunsan.ac.kr/cie
Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea <i>Postdoctoral Researcher, Media Coding Research Section</i> Research on Gaussian splatting compression using video coding standards	Feb. 2025 – Aug. 2025 etri.re.kr
Sungkyunkwan University, Seoul, Korea <i>Researcher, Multimedia Computing Systems Laboratory</i> Designed viewport-dependent streaming system for MPEG immersive video (MIV)	Sep. 2019 – Feb. 2025 mcsk.skkk.edu
Purdue University, West Lafayette, IN, US <i>Visiting Student, SMART Lab</i> Designed 3D camera cluster immersive video acquisition system	Aug. 2021 – Jan. 2022 smart-laboratory.org
University of California, Santa Barbara (UCSB), Santa Barbara, CA, US <i>Visiting Student, Allosphere Lab</i> Designed super metric for immersive video	Jan. 2020 – Mar. 2020 allosphere.ucsb.edu

SPECIALTIES

Extended Reality: Omnidirectional media format (OMAF), viewport-adaptive 360-degree video system (3DoF, 3DoF+, 6DoF), view synthesis, tiled streaming.

Image/Video Compression: High-efficiency video coding (HEVC), versatile video coding (VVC), MPEG immersive video (MIV, ISO/IEC 23090-12).

3D Scene Reconstruction: Gaussian splat coding (GSC), 3D Gaussian splatting (3DGS), neural radiance fields (NeRF).

PUBLICATIONS

International Journals

1. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “*DATRA-MIV: Decoder-Adaptive Tiling and Rate Allocation for MPEG Immersive Video*“, *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)*, Vol. 20, No. 7, pp. 1-22, May. 2024.
2. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “*Entropy-constrained Implicit Neural Representations for Deep Image Compression*“, *IEEE Signal Processing Letters (SPL)*, Vol. 30, pp. 663-667, May. 2023.
3. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “*Group-based Adaptive Rendering System for 6DoF Immersive Video Streaming*“, *IEEE Access*, Vol. 10, pp. 102691-102700, Sep. 2022.
4. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “*VVC Subpicture-based Frame Packing for MPEG Immersive Video*“, *IEEE Access*, Vol. 10, pp. 103781-103792, Sep. 2022.
5. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “*Sub-bitstream Packing Based Lightweight Tiled Streaming for 6DoF Immersive Video*“, *IET Electronics Letters*, Vol. 57, No. 25, pp. 973-976, Oct. 2021.
6. Tuan Thanh Le, **Jong-Beom Jeong**, SangSoon Lee, Jaehyoun Kim, Eun-Seok Ryu, “*An Efficient Viewport-Dependent 360 VR System Based on Adaptive Tiled Streaming*“, *Computers Materials and Continua (CMC)*, Vol. 66, No. 3, pp. 2627-2643, Jan. 2021.
7. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Eun-Seok Ryu, “*Towards 3DoF+ 360 Video Streaming System for Immersive Media*“, *IEEE Access*, Vol. 7, pp. 136399-136408, Sep. 2019.
8. Tuan Thanh Le, **JongBeom Jeong**, Eun-Seok Ryu, “*Efficient Transcoding and Encryption for Live 360 CCTV System*“, *MDPI, Applied Sciences*, Vol. 9, No. 4, pp. 760, Feb. 2019.
9. **JongBeom Jeong**, Dongmin Jang, Jangwoo Son, Eun-Seok Ryu, “*3DoF+ 360 Video Location based Asymmetric Down-sampling for View Synthesis to Immersive VR Video Streaming*“, *MDPI, Sensors*, Vol. 18, No. 9, pp. 3148, Sep. 2018.

International Conferences and Presentations

1. Jaeyeol Choi, **Jong-Beom Jeong**, Jun-Hyeong Park, Eun-Seok Ryu, “*A Deep Learning-based 6DoF Video Synthesizing Method using Instant-NGPs*“, *IEEE Visual Communications and Image Processing 2023 (VCIP2023)*, Dec. 4, 2023. (SCOPUS Indexed)
2. **Jong-Beom Jeong**, Jun-Hyeong Park, Soonbin Lee, Eun-Seok Ryu, “*Fine-grained Single-layer Tiling for Viewport-Adaptive 360-degree Video Streaming*“, *IEEE Visual Communications and Image Processing 2023 (VCIP2023)*, Dec. 4, 2023. (SCOPUS Indexed)
3. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “*Implementing Partial Atlas Selector for Viewport-dependent MPEG Immersive Video Streaming*“, *ACM Network and Operating System Support for Digital Audio and Video 2023 (NOSSDAV2023)*, Jun. 10, 2023. (SCOPUS Indexed)
4. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “*Delta QP Allocation for MPEG Immersive Video*“, *International Conference on ICT Convergence 2022 (ICTC2022)*, Oct. 20, 2022.
5. YiHyun Choi, **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “*Overview of the Video-based Dynamic Mesh Coding (V-DMC) Standard Work*“, *International Conference on ICT Convergence 2022 (ICTC 2022)*, Oct. 20, 2022.

6. Jaeyeol Choi, **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “Overview of the Volumetric Video Capturing System for Immersive Media“, *International Conference on ICT Convergence 2022 (ICTC 2022)*, Oct. 20, 2022.
7. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “Atlas Level Rate Distortion Optimization for 6DoF Immersive Video Compression“, *ACM Network and Operating System Support for Digital Audio and Video 2022 (NOSSDAV2022)*, Jun. 14-17, 2022. (SCOPUS Indexed)
8. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “Efficient Group-Based Packing Strategy for 6DoF Immersive Video Streaming“, *International Conference on Information Networking 2022 (ICOIN2022)*, Jan. 12-15, 2022. (SCOPUS Indexed)
9. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “Rethinking Fatigue-Aware 6DoF Video Streaming: Focusing on MPEG Immersive Video“, *International Conference on Information Networking 2022 (ICOIN2022)*, Jan. 12-15, 2022. (SCOPUS Indexed)
10. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “DWS-BEAM: Decoder-Wise Subpicture Bitstream Extracting and Merging for MPEG Immersive Video“, *IEEE Visual Communications and Image Processing 2021 (VCIP2021)*, Dec. 5-8, 2021. (SCOPUS Indexed)
11. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “Implementing Viewport Tile Extractor for Viewport-Adaptive 360-Degree Video Tiled Streaming“, *International Conference on Information Networking 2021 (ICOIN2021)*, Jan. 13-16, 2021. (SCOPUS Indexed)
12. Soonbin Lee, **Jong-Beom Jeong**, Inae Kim, Eun-Seok Ryu, “Learned Image Compression with Frequency Domain Loss“, *International Conference on Information Networking 2021 (ICOIN2021)*, Jan. 13-16, 2021. (SCOPUS Indexed)
13. **Jong-Beom Jeong**, Soonbin Lee, Il-Woong Ryu, Tuan Thanh Le, Eun-Seok Ryu, “Towards Viewport-dependent 6DoF 360 Video Tiled Streaming for Virtual Reality Systems“, *ACM Multimedia 2020 (ACM MM 2020)*, pp. 3687-3695, Oct. 15-16, 2020. (SCOPUS Indexed)
14. Soonbin Lee, Dongmin Jang, **JongBeom Jeong**, Eun-Seok Ryu, “Motion-constrained Tile Set based 360-Degree Video Streaming Using Saliency Map Prediction“, *ACM Network and Operating System Support for Digital Audio and Video 2019 (NOSSDAV2019)*, Jun. 21, 2019. (SCOPUS Indexed)
15. **JongBeom Jeong**, Seondae Kim, Eun-Soo Park, Eun-Seok Ryu, “Image-based Fire Detection System Using Deep Learning“, *International Multi-Conference on Engineering and Technology Innovation 2018 (IMETI2018)*, Nov. 3, 2018.
16. Eun-Soo Park, Seondae Kim, **JongBeom Jeong**, Eun-Seok Ryu, “The Power Line Deflection Detect System using panoramic video stitching Technology and Deep Learning“, *International Multi-Conference on Engineering and Technology Innovation 2018 (IMETI2018)*, Nov. 3, 2018.
17. **JongBeom Jeong**, Dongmin Jang, Jangwoo Son, Eun-Seok Ryu, “Bitrate Efficient 3DoF+ 360 Video View Synthesis for Immersive VR Video Streaming“, *International Conference on ICT Convergence 2018 (ICTC2018)*, Oct. 17-19, 2018.

Korean Domestic Journals

1. Jaeyeol Choi, Yeong-Gyu Kim, **Jong-Beom Jeong**, JunHyeong Park, Eun-Seok Ryu, “Compression of Dynamic 3D Gaussian Splatting for Efficient Storage and Transmission of Immersive Video“, *Journal of Broadcasting Engineering (JBE)*, Vol. 29, No. 6, Nov. 2024.

2. Jun-Hyeong Park, **Jong-Beom Jeong**, Jaeyeol Choi, Yeong-Gyu Kim, Eun-Seok Ryu, “*Multi-View Depth Generation Method Using ViT-Based Depth Estimation and MVS-Based Depth Optimization*“, *Journal of Broadcasting Engineering (JBE)*, Vol. 29, No. 6, Nov. 2024.
3. Isaac Yang, Yeongil Ryu, Jun-Hyeong Park, Jaeyeol Choi, **Jong-Beom Jeong**, Jang Hyun Kim, Eun-Seok Ryu, “*Real-life Spatial Volumetric Video Acquisition and Encoding System*“, *Journal of Broadcast Engineering (JBE)*, Vol. 29, No. 4, Jul. 2024.
4. Yihyun Choi, **Jong-Beom Jeong**, Eun-Seok Ryu, “*Efficient Conversion Method of Dynamic Point Cloud for Generating Dynamic Mesh*“, *Journal of Broadcast Engineering (JBE)*, Vol. 28, No. 5, Sep. 2023.
5. **Jong-Beom Jeong**, Soonbin Lee, Jaeyeol Choi, Gwangsoon Lee, Sangwoon Kwak, Won-Sik Cheong, Bongho Lee, Eun-Seok Ryu, “*Towards Group-based Adaptive Streaming for MPEG Immersive Video*“, *Journal of Broadcast Engineering (JBE)*, Vol. 28, No. 2, Mar. 2023.
6. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “*Implementing Geometry Packing for MPEG Immersive Video*“, *Journal of Broadcast Engineering (JBE)*, Vol. 27, No. 6, Nov. 2022.
7. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “*Performance Analysis of 6DoF Video Streaming Based on MPEG Immersive Video*“, *Journal of Broadcast Engineering (JBE)*, Vol. 27, No. 5, Sep. 2022.
8. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “*Group-based Adaptive Rendering for 6DoF Immersive Video Streaming*“, *Journal of Broadcast Engineering (JBE)*, Vol. 27, No. 2, Mar. 2022.
9. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “*Performance Analysis of Viewport-dependent Tiled Streaming on 16K Ultra High-quality 360-degree Video*“, *KSII Journal of Internet Computing and Service (JICS)*, Vol. 22, No. 3, Jun. 2021.
10. **Jong-Beom Jeong**, SeungHwan Kim, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “*Super Metric: Quality Assessment Methods for Immersive Video*“, *KSII Journal of Internet Computing and Service (JICS)*, Vol. 22, No. 2, Apr. 2021.
11. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Sangsoon Lee, Eun-Seok Ryu, “*Implementing VVC Tile Extractor for 360-degree Video Streaming Using Motion-Constrained Tile Set*“, *Journal of Broadcast Engineering (JBE)*, Vol. 25, No. 7, Dec. 2020.
12. Soonbin Lee, **Jong-Beom Jeong**, Inae Kim, Sangsoon Lee, Eun-Seok Ryu, “*Screen Content Coding Analysis to Improve Coding Efficiency for Immersive Video*“, *Journal of Broadcast Engineering (JBE)*, Vol. 25, No. 6, Nov. 2020.
13. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Sungbin Kim, Sangsoon Lee, Eun-Seok Ryu, “*A Study on 3DoF+ 360 Video Projection Conversion for Efficient 3DoF+ Video Streaming*“, *Journal of Broadcast Engineering (JBE)*, Vol. 24, No. 7, pp. 1209-1219, Dec. 2019.
14. Soonbin Lee, Dongmin Jang, **Jong-Beom Jeong**, Sangsoon Lee, Eun-Seok Ryu, “*Tile-Based 360 Degree Video Streaming System with User’s gaze Prediction*“, *Journal of Broadcast Engineering (JBE)*, Vol. 24, No. 6, Nov. 2019.
15. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Sangsoon Lee, Eun-Seok Ryu, “*Implementing 3DoF+ 360 Video Compression System for Immersive Media*“, *Journal of Broadcast Engineering (JBE)*, Vol. 24, No. 5, Sep. 2019.

16. Dongmin Jang, Jang-Woo Son, **JongBeom Jeong**, Eun-Seok Ryu, “Implementing Renderer for Viewport Dependent 360 Video“, *Journal of Broadcast Engineering (JBE)*, Vol. 23, No. 6, pp. 747-758, Nov. 2018.

Korean Domestic Conferences

1. YooSung Choi, GyeongHo Choi, Seung-Sik Choi, Nayeon Lee, **Jong-Beom Jeong**, “Automated 3D Object Acquisition and Gaussian Splat Generation Using Six Degrees of Freedom Robot Arm”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 18, 2026.
2. SeoungSik Choi, NaYeon Lee, YooSung Choi, **Jong-Beom Jeong**, “3D Space Data Acquisition and SLAM Visualization using 3D LiDAR-Equipped Automated Guided Vehicle”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 18, 2026.
3. Seung-Mi Lee, GyeongHo Choi, GunHee Han, **Jong-Beom Jeong**, “Research on MPEG GSC-Based Gaussian Splat Quality Difference by Structure-from-Motion”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 18, 2026.
4. Nayeon Lee, GyeongHo Choi, SeungSik Choi, YooSung Choi, **Jong-Beom Jeong**, “Optimization of Key Frame Extraction for 3D Gaussian Splatting in Indoor Scenes”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 18, 2026.
5. Geon Hee Han, Gyeong Ho Choi, Seung-Mi Lee, Soonchoul Kim, Hyeju Oh, **Jong-Beom Jeong**, “Towards Bitrate Ladder for Immersive Contents”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 18, 2026.
6. GyeongHo Choi, GunHee Han, Seung-Mi Lee, **Jong-Beom Jeong**, “Research of Gaussian Splat Generation of Real-Space Object and Hyperparameter Optimization”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 18, 2026.
7. **Jong-Beom Jeong**, Jihoon Do, Hahyun Lee, Seoha Kim, Gun Bang, “Performance Analysis of Video Coding-Based Gaussian Splat Coding”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 22, 2025.
8. Young-Gyu Kim, **Jong-Beom Jeong**, Jun-Hyeong Park, Jaeyeol Choi, Eun-Seok Ryu, “Performance Comparison of NeRF Combined with Video Codecs”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 27, 2024.
9. Min-Su Park, Young-Gyu Kim, **Jong-Beom Jeong**, Yeongil Ryu, Isaac Yang, Eun-Seok Ryu, “Performance Analysis of Point Cloud-Mesh Conversion Using Screened Poisson Reconstruction and Deep Learning-Based Point2Mesh Algorithms”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 27, 2024.
10. Jun-Hyeong Park, **Jong-Beom Jeong**, Jaeyeol Choi, Young-Gyu Kim, Eun-Seok Ryu, “Depth Prediction Transformer-Based Multi-View Video Depth Map Generation Technique for 6-DoF Immersive Video Synthesis”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 27, 2024.
11. Soo-Been Jo, Yeongil Ryu, Isaac Yang, Minsu Park, **Jong-Beom Jeong**, Eun-Seok Ryu, “Overview of Depth Estimation and Refinement for Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 27, 2024.
12. Jaeyeol Choi, Yeong-Gyu Kim, **Jong-Beom Jeong**, Jun-Hyeong Park, Eun-Seok Ryu, “Compressing 4D Gaussians based on Quantization and Video Codec”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 27, 2024.

13. YiHyun Choi, **Jong-Beom Jeong**, Eun-Seok Ryu, “Overview of Video-based Dynamic Mesh Coding Standardization”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 30, 2023.
14. Jaeyeol Choi, **Jong-Beom Jeong**, Junhyeong Park, Hong-Chang Shin, Jun-Young Jeong, Gwangsoon Lee, Eun-Seok Ryu, “Analyzing the Effectiveness of Adapting Transfer Learning to Neural Radiance Fields for Video Representation”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 30, 2023.
15. Jun-Hyeong Park, **Jong-Beom Jeong**, Jae-Yeol Choi, Eun-Seok Ryu, “Comparison of Neural Radiance Fields-based Models for 3D Scene Reconstruction”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 30, 2023.
16. **Jong-Beom Jeong**, Soonbin Lee, Jaeyeol Choi, Gwangsoon Lee, Sangwoon Kwak, Won-Sik Cheong, Bongho Lee, Eun-Seok Ryu, “Towards Group-based Adaptive Streaming for MPEG Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 18, 2022.
17. Mi Jang, **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “Decoder-adaptive Single-layer Tile Binding for Viewport-dependent 360-degree Video Tiled Streaming”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 20-22, 2022.
18. **Jong-Beom Jeong**, Soonbin Lee, YiHyun Choi, Eun-Seok Ryu, “Implementing Geometry Packing in TMIV for Six Degrees of Freedom Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 20-22, 2022.
19. YiHyun Choi, **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “Overview of MPEG Dynamic Mesh Coding (DMC) for Volumetric Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 20-22, 2022.
20. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “Efficient Pruning Cluster Graph Strategy for MPEG Immersive Video Compression”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 20-22, 2022.
21. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “Implicit Neural Representations with Entropy Loss for Deep Image Compression”, *Workshop on Image Processing and Image Understanding (IPIU)*, Feb. 9-11, 2022.
22. Chang-Hee Han, **Jong-Beom Jeong**, Eun-Seok Ryu, “Cluster-based MV-HEVC Coding Mode Decision for MPEG Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 27, 2021.
23. Jun-Ho Park, **Jong-Beom Jeong**, Se-Hoon Jeong, Eun-Seok Ryu, “Decoder Adaptive Tile Clustering Algorithm for Viewport-Dependent Virtual Reality Video Decoding System”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 27, 2021.
24. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “Implementing Fast Tile Merger for Viewport-dependent 360-degree Video Streaming”, *Korean Society for Internet Information (KSII) Spring Conference*, Apr. 23-24, 2021.
25. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “Group-based TMIV for Viewport-Adaptive Streaming”, *Korean Society for Internet Information (KSII) Spring Conference*, Apr. 23-24, 2021.
26. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “Implementing Multiple-tile Extractor for Viewport-dependent 360 Video Streaming”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 27-28, 2020.

27. Soonbin Lee, **Jong-Beom Jeong**, Inae Kim, Eun-Seok Ryu, “*Light Field Lenslet Video Compression using Screen Content Coding Tool*”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 27-28, 2020.
28. Inae Kim, **Jong-Beom Jeong**, Soonbin Lee, Yeongil Ryu, Eun-Seok Ryu, “*Group-Based TMIV Encoding for Immersive Video using MV-HEVC*”, *Korean Society for Internet Information (KSII) Fall Conference*, Oct. 30-31, 2020.
29. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Yeongil Ryu, Eun-Seok Ryu, “*Performance Analysis of Viewport-dependent Tiled Streaming on 16K Ultra High-quality 360-degree Video*”, *Korean Society for Internet Information (KSII) Fall Conference*, Oct. 30-31, 2020.
30. Soonbin Lee, **Jong-Beom Jeong**, Inae Kim, Eun-Seok Ryu, “*Performance Analysis of Asymmetric Quantization Parameter On Immersive Video*”, *Korean Society for Internet Information (KSII) Fall Conference*, Oct. 30-31, 2020.
31. Sungbin Kim, Yeongil Ryu, **Jong-Beom Jeong**, Inae Kim, Soonbin Lee, SeungHwan Kim, Eun-Seok Ryu, “*Objective Quality Metrics for Virtual Reality Services*”, *Summer Workshop on Computer Communications (SWCC)*, Aug. 27, 2020.
32. Soonbin Lee, **Jong-Beom Jeong**, Sungbin Kim, Inae Kim, Eun-Seok Ryu, “*Screen Content Coding Analysis to Improve Coding Efficiency for Light Field Lenslet Video*”, *Summer Workshop on Computer Communications (SWCC)*, Aug. 27, 2020.
33. **Jong-Beom Jeong**, Soonbin Lee, Il-Woong Ryu, Sungbin Kim, Inae Kim, Eun-Seok Ryu, “*Implementing Motion-constrained Tile Set Based Tile Extractor on VVC*”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jul. 13-15, 2020.
34. Soonbin Lee, **Jong-Beom Jeong**, Il-Woong Ryu, Sungbin Kim, Inae Kim, Eun-Seok Ryu, “*Intra Block Copy Analysis to Improve Coding Efficiency for Immersive Video*”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jul. 13-15, 2020.
35. Il-Woong Ryu, **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Sungbin Kim, Eun-Seok Ryu, “*Performance Analysis of Parameter Size of MinPatchSize, Erosion and Dilation in Test Model for Immersive Video*”, *Korean Society for Internet Information (KSII) Spring Conference*, May. 22-23, 2020.
36. Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “*An Overview of Learned Image Compression*”, *Korean Society for Internet Information (KSII) Spring Conference*, May. 22-23, 2020.
37. **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Il-Woong Ryu, Sungbin Kim, Dongmin Jang, Eun-Seok Ryu, “*A Study of Video Quality Assessment Methods Performance Comparison for 3DoF+ Video*”, *Korean Society for Internet Information (KSII) Spring Conference*, May. 22-23, 2020.
38. Sungbin Kim, **Jong-Beom Jeong**, Dongmin Jang, Inae Kim, Soonbin Lee, Il-Woong Ryu, Eun-Seok Ryu, “*An Overview of MV-HEVC based Light Field Image Processing*”, *Korean Society for Internet Information (KSII) Spring Conference*, May. 22-23, 2020.
39. Soonbin Lee, **Jong-Beom Jeong**, Sungbin Kim, Eun-Seok Ryu, “*HEVC Tile Grouping for Viewport-dependent 3DoF+ Streaming*”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 29-30, 2019.
40. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Il-Woong Ryu, Tuan Thanh Le, Jaesung Ryu, Eun-Seok Ryu, “*Implementing Multi-view 360 Video Compression System for Immersive Media*”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 19-21, 2019.

41. Soonbin Lee, Dongmin Jang, **Jong-Beom Jeong**, Il-Woong Ryu, Tuan Thanh Le, Eun-Seok Ryu, “A Study on Viewport Quality Assessment for Tile Based Mixed Quality 360 Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 19-21, 2019.
42. Dongmin Jang, **Jong-Beom Jeong**, Soonbin Lee, Tuan Thanh Le, Il-Woong Ryu, Eun-Seok Ryu, “Implementing Tile Merging for Tile Based 360 Video Streaming”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 19-21, 2019.
43. Tuan Thanh Le, Dongmin Jang, **Jong-Beom Jeong**, Soonbin Lee, Il-Woong Ryu, Eun-Seok Ryu, “Real-Time Transcoding and Advanced Encryption for 360 CCTV Streaming”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 19-21, 2019.
44. **Jong-Beom Jeong**, Dongmin Jang, Ju-hyeong Kim, Soonbin Lee, Eun-Seok Ryu, “3DoF+ 360 Video Projection Conversion for Saving Transmission”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 02-03, 2018.
45. Jangwoo Son, Dongmin Jang, **Jong-Beom Jeong**, Eun-Seok Ryu, “Viewport-Based 360 Degree Video Streaming using Motion-Constrained Tile Set”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 21-23, 2018.
46. Seondae Kim, Eun Soo Park, Jaseong Koo, **Jong-Beom Jeong**, Eun-Seok Ryu, “Senior Life Logging and Analysis by Using Deep Learning and Captured Multimedia Data”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 21-23, 2018.
47. EunSoo Park, Seondae Kim, **Jong-Beom Jeong**, Eun-Seok Ryu, “Overview of AI-based Fault Detection and Diagnostics”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 21-23, 2018.
48. Dongmin Jang, Jang-Woo Son, **Jong-Beom Jeong**, Eun-Seok Ryu, “Implementing Renderer for Viewport Dependent 360 Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 21-23, 2018.
49. **Jong-Beom Jeong**, Jang-Woo Son, Dongmin Jang, Eun-Seok Ryu, “Implementation of SEI Parser and Decoder for Virtual Reality Video Projection Processing”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 21-23, 2018.

PATENTS

US/PCT Patents

1. Eun-Seok Ryu, **Jong-Beom Jeong**, Soonbin Lee, “Method And Apparatus For Multi View Video Encoding And Decoding, And Method For Transmitting Bitstream Generated By The Multi View Video Encoding Method”, *Research & Business Foundation Sungkyunkwan University*, No. US 12,604,035, Apr. 14, 2026.
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4. Jaeyeol Choi, Jun-Hyeong Park, **Jong-Beom Jeong**, Eun-Seok Ryu, “Immersive Graphic Primitives”, No. C-2023-053973, Nov. 22, 2023.
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10. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “HEVC Slice Segment Address Based Fast Tile Extractor”, No. C-2021-029716, Jul. 27, 2021.
11. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “MCTS Based HEVC Tile Merger”, No. C-2021-029715, Jul. 27, 2021.
12. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “MCTS Based Tile Extractor on VVC”, No. C-2020-044854, Nov. 25, 2020.
13. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “MCTS Based Multiple-Tile Extractor on HEVC”, No. C-2020-044853, Nov. 25, 2020.
14. **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “6DoF 360 video viewport tile selector”, No. C-2020-044852, Nov. 25, 2020.
15. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Eun-Seok Ryu, “View location based 3DoF+ 360 video reconstruction module”, No. C-2019-029956, Oct. 23, 2019.
16. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Eun-Seok Ryu, “Region growing based 3DoF+ 360 video unpacking module”, No. C-2019-029955, Oct. 23, 2019.
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HONORS AND AWARDS

- **Best Paper Award**, Jun-Hyeong Park, **Jong-Beom Jeong**, Jaeyeol Choi, Yeong Gyu Kim, Eun-Seok Ryu, “Depth Prediction Transformer-Based Multi-View Video Depth Map Generation Technique for 6-DoF Immersive Video Synthesis”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Jun. 28, 2024.
- **Encouragement Paper Award**, Jaeyeol Choi, **Jong-Beom Jeong**, Junhyeong Park, Hong-Chang Shin, Jun-Young Jeong, Gwangsoon Lee, Eun-Seok Ryu, “Analyzing the Effectiveness of Adapting Transfer Learning to Neural Radiance Fields for Video Representation”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 30, 2023.
- **Grand Paper Award**, **Jong-Beom Jeong**, Soonbin Lee, Jaeyeol Choi, Gwangsoon Lee, Sangwoon Kwak, Won-Sik Cheong, Bongho Lee, Eun-Seok Ryu, “Towards Group-based Adaptive Streaming for MPEG Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Dec. 7, 2022.
- **Grand Award**, **Jong-Beom Jeong**, “MPEG Immersive Video: Towards High-Quality Metaverse Video Streaming Technology”, *SKKU Research Matters*, Nov. 7, 2022.
- **Grand Award**, **Jong-Beom Jeong**, Soonbin Lee, “Decoder-Adaptive Tiling and Rate Allocation for MPEG Immersive Video”, *SKKU Graduate Student Research Paper Awards*, Sep. 30, 2022.
- **Excellence Paper Award**, Mi Jang, **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “Decoder-adaptive Single-layer Tile Binding for Viewport-dependent 360-degree Video Tiled Streaming”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 22, 2022.
- **Excellence Paper Award**, **Jong-Beom Jeong**, Soonbin Lee, YiHyun Choi, Eun-Seok Ryu, “Implementing Geometry Packing in TMIV for Six Degrees of Freedom Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Jun. 22, 2022.
- **President’s List**, **Jong-Beom Jeong**, *Sungkyunkwan University (SKKU)*, Dec. 22, 2021.
- **Bronze Paper Award**, **Jong-Beom Jeong**, Soonbin Lee, Eun-Seok Ryu, “Subpicture-based Rate Control and Frame Packing for 6DoF Immersive Video Streaming”, *IEEE Seoul Section Student Paper Contest 2021*, Dec. 11, 2021.
- **Bronze Paper Award**, Soonbin Lee, **Jong-Beom Jeong**, Eun-Seok Ryu, “Joint Bit Allocation between Texture and Geometry for Immersive Video Coding”, *IEEE Seoul Section Student Paper Contest 2021*, Dec. 11, 2021.
- **Encouragement Award**, Jun-Ho Park, **Jong-Beom Jeong**, Se-Hoon Jeong, Eun-Seok Ryu, “Decoder Adaptive Tile Clustering Algorithm for Viewport-Dependent Virtual Reality Video Decoding System”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 27, 2021.
- **Excellence Paper Award**, Chang-Hee Han, **Jong-Beom Jeong**, Eun-Seok Ryu, “Cluster-based MV-HEVC Coding Mode Decision for MPEG Immersive Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Fall Conference*, Nov. 27, 2021.
- **Bronze Paper Award**, **Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Eun-Seok Ryu, “Viewport-dependent Two-layer 6DoF 360-degree Video Tiled Streaming for Immersive Media”, *IEEE Seoul Section Student Paper Contest 2020*, Dec. 16, 2020.

- **Excellence Paper Award, Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Yeongil Ryu, Eun-Seok Ryu, “Performance Analysis of Viewport-dependent Tiled Streaming on 16K Ultra High-quality 360-degree Video”, *The Korean Society For Internet Information (KSII) Fall Conference*, Oct. 30, 2020.
- **Excellence Paper Award, Jong-Beom Jeong**, Soonbin Lee, Inae Kim, Il-Woong Ryu, Sungbin Kim, Dongmin Jang, Eun-Seok Ryu, “A Study of Video Quality Assessment Methods Performance Comparison for 3DoF+ Video”, *The Korean Society For Internet Information (KSII)*, May. 22, 2020.
- **Excellent Paper Award**, Dongmin Jang, Jang-Woo Son, **Jong-Beom Jeong**, Eun-Seok Ryu, “Implementing Renderer for Viewport Dependent 360 Video”, *The Korean Institute of Broadcast and Media Engineers (KIBME) Summer Conference*, Dec. 3, 2018.
- **Excellence Award, Jong-Beom Jeong**, “Service of Minimizing Length of Traveling Business Areas Using TSP Algorithm”, *K-Global Starthon*, Aug. 27, 2017.

TEACHING EXPERIENCE

- **Lecturer**, Creating Virtual Worlds, *College of Computing and Informatics, School of Convergence, Culture & Technology Convergence Major, Sungkyunkwan University, Seoul, Korea*, Mar. 2024 – Jun. 2024.
- **Lecturer**, Immersive Media International Standard, *College of Computing and Informatics, Department of Immersive Media Engineering, Sungkyunkwan University, Seoul, Korea*, Sep. 2023 – Dec. 2023.
- **Lecturer**, Creating Virtual Worlds, *College of Computing and Informatics, School of Convergence, Culture & Technology Convergence Major, Sungkyunkwan University, Seoul, Korea*, Mar. 2023 – Jun. 2023.
- **Lecturer**, Data Structure / Algorithm Bootcamp Using C Language, *Artificial Intelligence Convergence and Open Sharing System & Sungkyun EduTech Research Institute, Sungkyunkwan University, Seoul, Korea*, Dec. 2022 – Dec. 2022.
- **Lecturer**, Creating Virtual Worlds, *College of Computing and Informatics, School of Convergence, Culture & Technology Convergence Major, Sungkyunkwan University, Seoul, Korea*, Sep. 2022 – Dec. 2022.
- **Teaching Assistant**, Linux System, *Multimedia Computing Systems Lab, Department of Computer Science Education, Sungkyunkwan University, Seoul, Korea*, Mar. 2022 – Jun. 2022.
- **Teaching Assistant**, Linux System, *Multimedia Computing Systems Lab, Department of Computer Education, Sungkyunkwan University, Seoul, Korea*, Mar. 2021 – Jun. 2021.
- **Teaching Assistant**, VR and AR Processing, *Multimedia Computing Systems Lab, Department of Computer Education, Sungkyunkwan University, Seoul, Korea*, Sep. 2020 – Dec. 2020.
- **Teaching Assistant**, Linux System, *Multimedia Computing Systems Lab, Department of Computer Education, Sungkyunkwan University, Seoul, Korea*, Mar. 2020 – Jun. 2020.
- **Teaching Assistant**, Virtual Reality Processing Systems, *Multimedia Computing Systems Lab, Department of Computer Education, Sungkyunkwan University, Seoul, Korea*, Mar. 2020 – Jun. 2020.
- **Teaching Assistant**, Image Processing, *Multimedia Communications & Systems Lab, Department of Computer Engineering, Gachon University, Seongnam, Korea*, Mar. 2018 – Jun. 2018.

- **Teaching Assistant**, Data Structure, *Department of Computer Engineering, Gachon University, Seongnam, Korea*, Mar. 2017 – Jun. 2017.
- **Lecturer**, English, *Samsung Dream Class, Pungsaeng Middle School, Seongnam, Korea*, Sep. 2016 – Aug. 2018.

AFFILIATION

MPEG Korea National Body, Member (2018 – Present)

Institute of Electrical and Electronics Engineers (IEEE), Member (2018 – Present)

- **IEEE Circuits and Systems Society (CASS)**

The Korean Institute of Broadcast and Media Engineers (KIBME), Member (2018 – Present)

Association for Computing Machinery (ACM), Member (2020 – Present)

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