

# Jong-Beom Jeong

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## EDUCATION

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**Sungkyunkwan University (SKKU), Seoul, Korea** Sep. 2019 – Feb. 2025  
*Ph.D. in Computer Science Education (advisor: Prof. Eun-Seok Ryu)* GPA: 4.25 / 4.5

**Gachon University, Seongnam, Korea** Mar. 2015 – Aug. 2018  
*B.S. in Computer Engineering (Major), Business Administration (Minor)* GPA: 4.02 / 4.5

## EXPERIENCE

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**Kunsan National University (KSNU), Gunsan, Korea** Sep. 2025 – Present  
*Assistant Professor, Department of Computer Science and Information Engineering* [kunsan.ac.kr/cie](http://kunsan.ac.kr/cie)

- Research on intelligent immersive media

**Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea** Feb. 2025 – Aug. 2025  
*Postdoctoral Researcher, Media Coding Research Section* [etri.re.kr](http://etri.re.kr)

- Research on Gaussian splatting compression using video coding standards

**Sungkyunkwan University, Seoul, Korea** Sep. 2019 – Feb. 2025  
*Researcher, Multimedia Computing Systems Laboratory* [mcsk.skkw.edu](http://mcsk.skkw.edu)

- Designed viewport-dependent streaming system for MPEG immersive video (MIV)

**Purdue University, West Lafayette, IN, US** Aug. 2021 – Jan. 2022  
*Visiting Student, SMART Lab* [smart-laboratory.org](http://smart-laboratory.org)

- Designed 3D camera cluster immersive video acquisition system

**University of California, Santa Barbara (UCSB), Santa Barbara, CA, US** Jan. 2020 – Mar. 2020  
*Visiting Student, AlloSphere Lab* [allosphere.ucsb.edu](http://allosphere.ucsb.edu)

- Designed super metric for immersive video

## SPECIALTIES

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**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

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### 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, **Jong-Beom 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. **Jong-Beom 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 (ICTC2022), 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 (ICTC2022), 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, JunHyeong 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. **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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. **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.
11. 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.

12. **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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. **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.
19. 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.
20. **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.
21. 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.
22. 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.
23. **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.
24. 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.
25. 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.

26. 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.
27. **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.
28. 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.
29. 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.
30. 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.
31. **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.
32. 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.
33. 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.
34. **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.
35. 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.
36. 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.
37. 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.
38. **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.
39. 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.

40. 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.
41. 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.
42. 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.
43. **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

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### 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.
2. Eun-Seok Ryu, **Jong-Beom Jeong**, Soonbin Lee, “Method And Apparatus For Immersive Video Encoding And Decoding, And Method For Transmitting A Bitstream Generated By The Immersive Video Encoding Method“, Research & Business Foundation Sungkyunkwan University, No. US 12,597,170, Apr. 07, 2026.
3. Eun-Seok Ryu, **Jong-Beom Jeong**, Soonbin Lee, “Method And Apparatus For Immersive Video Encoding And Decoding, And Method For Transmitting A Bitstream Generated By The Immersive Video Encoding Method“, Research & Business Foundation Sungkyunkwan University, No. US 19/561,713, Mar. 10, 2026 [Application].
4. 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 19/557,289, Mar. 05, 2026 [Application].
5. Eun-Seok Ryu, Min-Su Park, **Jong-Beom Jeong**, Yeong-Gyu Kim, Lee-Sak Yang, Reagan Koo, “Method And Apparatus For Encoding Point Cloud Data And Method For Transmitting Data Generated By Point Cloud Data Encoding Method“, Research & Business Foundation Sungkyunkwan University, No. US 19/408,236, Dec. 03, 2025 [Application].
6. Eun-Seok Ryu, Soonbin Lee, **Jong-Beom Jeong**, “Neural Network-Based Image Compression Method“, Research & Business Foundation Sungkyunkwan University, No. US 12/475,602, Nov. 18, 2025.
7. Eun-Seok Ryu, **Jong-Beom Jeong**, Soonbin Lee, “Method And Apparatus For Immersive Video Encoding And Decoding“, Research & Business Foundation Sungkyunkwan University, No. US 12,347,147B2, Jul. 01, 2025.
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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.
17. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Eun-Seok Ryu, “Region growing based 3DoF+ 360 video packing module”, No. C-2019-029954, Oct. 23, 2019.
18. **Jong-Beom Jeong**, Soonbin Lee, Dongmin Jang, Eun-Seok Ryu, “View location based 3DoF+ 360 video pruning module”, No. C-2019-029953, Oct. 23, 2019.

#### HONORS AND AWARDS

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- **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

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- **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

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**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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