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About

I'm a Co-founder CTO at MOVIN. Before that, I was a Postdoc in Motion Computing Lab at KAIST and interned at Meta Reality Labs. My research goal is to improve the quality of digital character motion in computer graphics and AR/VR systems using deep learning methods. I currently focus on the 3D full-body markerless motion capture in real-time. I received a Ph.D. in Computer Graphics, from the KAIST, where I also completed my M.S. advised by Prof. Sung-Hee Lee. I acquired a B.S. in Physics and Mathematics, from KAIST.

Education

Korea Advanced Institute of Science and Technology (KAIST) *2017-2022 / South Korea*
Ph.D. in Computer Graphics / Motion Computing Laboratory / Advisor: Sung-Hee Lee
- Research on virtual motion stylization/characterization, motion synthesis/control and manifold space.

Korea Advanced Institute of Science and Technology (KAIST) *2015-2017 / South Korea*
M.S. in Computer Graphics / Motion Computing Laboratory / Advisor: Sung-Hee Lee
- Research on regression-based landmark detection of Human Models.

Korea Advanced Institute of Science and Technology (KAIST) *2009-2015 / South Korea*
B.S. in Physics and Mathematics
- Research on modeling the prey-predator system.

Publication

ELMO: Enhanced Real-time LiDAR Motion Capture through Upsampling *2024*
ACM Transactions on Graphics (TOG) / ACM SIGGRAPH ASIA 2024
Deok-Kyeong Jang*, Dongseok Yang*, Deok-Yun Jang*, Byeoli Choi*, Donghoon Shin, and Sung-Hee Lee†

MOVIN TRACIN' : Move Outside the Box *2024*
ACM SIGGRAPH 2024 Real-Time Live!
Byeoli Choi, Deok-Kyeong Jang†, Dongseok Yang, and Deok-Yun Jang

MOVIN: Real-time Motion Capture using a Single LiDAR *2023*
Computer Grahpics Forum (CGF) / Pacific graphics 2023
Deok-Kyeong Jang*, Dongseok Yang*, Deok-Yun Jang*, Byeoli Choi*, and Sung-Hee Lee†

MOCHA: Real-Time Motion Characterization via Context Matching *2023*
ACM SIGGRAPH ASIA 2023
Deok-Kyeong Jang, Yuting Ye, Jungdam Won and Sung-Hee Lee†

Motion Puzzle: Arbitrary Motion Style Transfer by Body Part *2022*
ACM Transactions on Graphics (TOG) / ACM SIGGRAPH 2022
Deok-Kyeong Jang, Soomin Park and Sung-Hee Lee†

Diverse Motion Stylization for Multiple Style Domains via Spatial-Temporal Graph-Based Generative Model *2021*
Proceedings of the ACM on Computer Graphics and Interactive Techniques (PACMCGIT) / SCA
Soomin Park, Deok-Kyeong Jang, and Sung-Hee Lee†

Constructing Human Motion Manifold With Sequential Networks *2020*

Computer Grahpics Forum (CGF) / Eurographics 2021

Deok-Kyeong Jang and Sung-Hee Lee†

Regression-Based Landmark Detection on Dynamic Human Models *2017*

Computer Grahpics Forum (CGF) / Pacific graphics

Deok-Kyeong Jang and Sung-Hee Lee†

*Equal contribution, †Corresponding author

WORK EXPERIENCE

CTO / Co-founder *2023.03 - now / MOVIN*

Product: Real-time markerless 3D full-body motion capture using a single LiDAR.

• Developed real-time full-body motion capture framework based on a single LiDAR, incorporating global translation tracking.Constructing a high-quality dataset featuring diverse subjects, containing synchronized LiDAR point cloud and optical motion capture data for a wide range of actions.

Postdoctoral Researcher *2023.03 - now / Motion Computing Lab, KAIST*

Advisor: Sung-Hee Lee

• Research on LiDAR based real-time 3d motion capture and motion synthesis.

Research Science Intern *2022.05 - 2022.10 / Meta Reality Labs, Redmond, USA*

Manager: Yuting Ye, Research Scientist in Gemini team from Meta Reality Labs

Collaborators: Dr.Jungdam Won, Research Scientist from Meta AI

• Research on motion characterization in real-time, enhancement of motion style transfer and retargeting with various input sensors.

PROJECTS

Motion tracking and characterization research for virtual avatars *2022 - 2023*

Meta Platforms Technologies

• As a researcher of the project, developed real-time motion characterization framework for virtual avatars.

Study of styled motion generation for non-verbal communication of virtual human agents *2020 - 2022*

National Research Foundation of Korea

• As a leading researcher of the project, developed humanoid agent's appearance-style customizable motion generation framework.

Development of 4D Reconstruction and Dynamic Deformable Action Model based Hyper Realistic Service Technology *2017 - 2021*

Ministry of Science, ICT and Future Planning, Giga Korea Project

• As a leading researcher of the project, developed motion style transfer method and plugins to automatically generate stylized motion.

Development of Simulation Software for Human Body-Sport Gear Complex for Rapidly Prototyping Customized Sports Gear *2015 - 2017*

Ministry of Culture, Sports and Tourism

• As a main developer of the project, developed an sports gear modeling technique that fits the personalized foot shape and sports gear interaction.

PAPER REVIEWER

SIGGRAPH, SIGGRAPH ASIA, Pacific Graphics, Computer Graphics Forum, IEEE Transactions on Visualization and Computer Graphics (TVCG)

TECHNICAL SKILLS

Programming Languages	Python | C# | C/C++ | Matlab
Operating Systems	Mac OS X | Linux/Unix | Windows
Frameworks & Libraries	PyTorch | Tensorflow | Eigen | igl | Numpy | etc.
Tools	Unity | Blender | Docker System | etc.