

# Bocheon (Kenny) Gim

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## EDUCATION

### Gwangju Institute of Science and Technology

*Master's in Intelligent Robotics*

Gwangju, Republic of Korea

*Mar. 2024 – Present*

### Gwangju Institute of Science and Technology

*Bachelor's in Electrical Engineering and Computer Science*

Gwangju, Republic of Korea

*Mar. 2018 – Feb. 2024*

## EXPERIENCE

### Graduate Research Assistant

*Gwangju Institute of Science and Technology*

Mar. 2024 – Present

*Advisor: SeungJun Kim*

- Led research in regards to reinterpreting vehicle forces in in-car VR, leading to first-authored publications [c.1, c.4] in applications such as virtual locomotion and visuo-proprioceptive manipulation
- Developed XR applications such as video-matting based object visualization in AV, haptic devices utilizing electrical/vestibular/thermal stimulation, and utilization of built-in vehicle systems for multisensory feedback
- Contributed in funded projects regarding the use of XR in everyday productivity, actuated XR systems powered by sensory intelligence and soft robotics, and human-centered physical system design

### Undergraduate Research Assistant

*Gwangju Institute of Science and Technology*

July. 2022 – Feb. 2024

*Advisor: SeungJun Kim*

- Led research in enabling active user-applied locomotion in in-car VR, leading to a first-authored publication [p.1]
- Developed a real hand visualization/interaction pipeline through real-time video matting as Bachelor's thesis [do.1]
- Developed optimized VR locomotion methods (arm-swinging, walk-in-place) for cooperative industrial workspaces

### English Translator & Training Systems Administrator

*Republic of Korea Air Force (ROKAF)*

May. 2020 – Feb. 2022

- Supported English/Korean translation & interpretation during US-ROK joint exercises and defense meetings
- Managed military intranet training systems and administrative infrastructure duties.
- Completed military obligation at Staff Sergeant (21 months in service).

## PUBLICATIONS

### Conferences & Journals | *CHI, UIST, ISMAR, TVCG*

[j.1] Ahmed Elsharkawy, **Bocheon Gim**, Aya Ataya, SeungJun Kim. "SelfBlending: Artificial Intelligence-driven Augmentation with Hand Interactions for Seamless Reality Blending in Virtual Environments"

*IEEE TVCG – Under Review*

[c.4] **Bocheon Gim**, Seongjun Kang, Dohyeon Yeo, Gwangbin Kim, Juwon Um, Jeongju Park, SeungJun Kim. "Defying Gravity: Towards Gravitoinertial Retargeting of Acceleration for Virtual Vertical Motion in In-Car VR"

*IEEE ISMAR 2025*

[c.3] Dohyeon Yeo, Gwangbin Kim, Minwoo Oh, Jeongju Park, **Bocheon Gim**, Seongjun Kang, Ahmed Elsharkawy, SeungJun Kim. "AttrCar: Multisensory In-Car VR with Thermal, Airflow, and Motion Feedback through Built-In Vehicle Systems"

*ACM UIST 2025*

[c.2] Seongjun Kang, Gwangbin Kim, **Bocheon Gim**, Jeongju Park, Semoo Shin, SeungJun Kim. "EarPressure VR: Ear Canal Pressure Feedback for Enhancing Environmental Presence in Virtual Reality"

*ACM UIST 2025*

[c.1] **Bocheon Gim**, Seokhyun Hwang, Seongjun Kang, Gwangbin Kim, Dohyeon Yeo, SeungJun Kim. "I Want to Break Free: Enabling User-Applied Active Locomotion in In-Car VR through Contextual Cues"

*ACM CHI 2025*

## Posters & Demos | CHI, UIST, ISMAR

[d.3] Dohyeon Yeo, Gwangbin Kim, Minwoo Oh, Jeongju Park, **Bocheon Gim**, Seongjun Kang, Ahmed Elsharkawy, SeungJun Kim. “Demonstration of Multisensory In-Car VR: Repurposing the Vehicle’s HVAC System and Power Seat for Immersive Haptic Feedback”

*IEEE ISMAR Demos 2025*

[d.2] Dohyeon Yeo, Gwangbin Kim, Minwoo Oh, Jeongju Park, **Bocheon Gim**, Seongjun Kang, Ahmed Elsharkawy, SeungJun Kim. “Demonstration of AttraCar: Multisensory In-Car VR with Thermal, Airflow, and Motion Feedback through Built-In Vehicle Systems”

*ACM UIST Demos 2025*

[d.1] Seongjun Kang, Gwangbin Kim, **Bocheon Gim**, Jeongju Park, Semoo Shin, SeungJun Kim. “Demonstration of EarPressure VR: Ear Canal Pressure Feedback for Enhancing Environmental Presence in Virtual Reality”

*ACM UIST Demos 2025*

[p.2] Juwon Um, **Bocheon Gim**, Seongjun Kang, Yumin Kang, Eunki Jeon, SeungJun Kim. “TeleHopper: Simulating a Jumping Sensation as Proprioceptive Feedback for Teleportation in Virtual Reality via Electrical Muscle Stimulation”

*ACM CHI Late-Breaking Work 2025*

[p.1] **Bocheon Gim**, Seongjun Kang, Gwangbin Kim, Dohyeon Yeo, Seokhyun Hwang, SeungJun Kim. “Curving the Virtual Route: Applying Redirected Steering Gains for Active Locomotion in In-Car VR”

*ACM CHI Late-Breaking Work 2024*

## Domestic | KCC

[do.2] Seongjun Kang, **Bocheon Gim**, Juwon Um, SeungJun Kim. “TherMusic: A Valence-Arousal-Based Music Emotion Classifier and Thermal Feedback Headset System”

*KIISE KCC 2025 (Best Paper Award 🏆)*

[do .1] **Bocheon Gim**, Seongjun Kang, Juwon Um, SeungJun Kim. “Utilizing Real-Time Video Matting to create a Scalable System for Real Hand Visualization and Interaction within Augmented Virtuality”

*KIISE KCC 2025*

## FUNDED PROJECTS

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- **HCI + AI for Human-Centered Physical System Design (AI for HCI)**, GIST-MIT Research Collaboration Grant, GIST Research Project (2024-2025)
- **SpaceTop: Spatial Computing HCI Technology for Everywhere XR Productivity Workstations**, University ICT Research Center (ITRC) Program with KAIST, IITP/MSIT (2024-2031)
- **Inter-University Alliance for Cultivating R&D Experts in Future Vehicular Technologies (I4FT)**, The Competency Development Program for Industry Specialist, KIAT/MOTIE (2022-2026)
- **Development of Natural User Interface (NUI) to Support Realistic Movement and Interaction within Metaverse Industrial Sites**, KETI (2022)

## SKILLS

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- **Languages:** Korean (Native), English (Native – iBT TOEFL 114/120, Jun. 2025)
- **Programming Languages:** Python, C, C#, C++, Java, Javascript, HTML/CSS, R
- **Software Tools:** Unity, Unreal Engine, SPSS, MATLAB, JASP
- **Hardware:** Arduino, Raspberry Pi
- **Visualization & Modeling:** Blender, Final Cut Pro, Adobe Illustrator

## ACADEMIC SERVICES

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- **Peer Review:** 18 total, 4 Special Recognitions for Outstanding Reviews
  - **Full Papers:** CHI PLAY, DIS, MobileHCI, IMWUT, AutoUI, SUI
  - **Posters:** CHI LBW, ISMAR Posters, DIS WIP, IMX WIP, MobileHCI WIP
- **Student Volunteer:** CHI 2025, ISMAR 2025
- **Invited Talks:** Korea Computer Congress 2025 (invited to present in-car VR research), hosted by Jin-Woo Jeong
- **Teaching:** HAFS Camp Senior Teacher (2019-2020), Hankuk Academy of Foreign Studies