

# Hyojoon Park

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## RESEARCH INTEREST

Physics-based simulation in computer graphics leveraging on machine learning. Computer vision with application in medical imagery and 3D reconstruction.

## EDUCATION

### University of Wisconsin-Madison

*Ph.D. student in Computer Sciences*

*Sep. 2021 - Current*

*Wisconsin, USA*

### Seoul National University

*M.S. in Mechanical Engineering*

*Feb. 2019*

*Seoul, South Korea*

· Thesis: Dental Simulator with Increased Z-width of Haptic Rendering (AsiaHaptics 2018)

· Research Area: Haptic, robotics, and physics-based simulation in computer graphics

### Technical University of Munich (TUM)

*B.S. Exchange Student in Mechanical Engineering*

*Spring 2014*

*Munich, Germany*

### Korea University

*B.S. in Mechanical Engineering*

*Feb. 2017*

*Seoul, South Korea*

## PUBLICATIONS

- **Collagen Fiber Centerline Tracking in Fibrotic Tissue via Deep Neural Networks with Variational Autoencoder-based Synthetic Training Data Generation,**  
Hyojoon Park, Bin Li, Yuming Liu, Michael S. Nelson, Helen M. Wilson, Eftychios Sifakis, and Kevin W. Eliceiri, Medical Image Analysis, 2023 (*Accepted*)
- **Capturing Detailed Deformations of Moving Human Bodies,**  
He Chen, Hyojoon Park, Kutay Macit, and Ladislav Kavan, SIGGRAPH, 2021  
[paper] [project page] [multi-camera calibration codes]
- **Adaptive Precision-Enhancing Hand Rendering for Wearable Fingertip Tracking Devices,**  
Hyojoon Park and Jung-Min Park, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020  
[paper] [video]
- **Stretchable Skin-Like Cooling/Heating Device for Reconstruction of Artificial Thermal Sensation in Virtual Reality,**  
Jinwoo Lee, Heayoun Sul, Wonha Lee, Kyung Rok Pyun, Inho Ha, Dongkwan Kim, Hyojoon Park, Hyeonjin Eom, Yeosang Yoon, Jinwook Jung, Dongjun Lee, and Seung Hwan Ko, Advanced Functional Materials, 2020  
[paper]
- **Dental Simulator with Increased Z-width of Haptic Rendering,**  
Hyojoon Park, Myungsin Kim, and Dongjun Lee, AsiaHaptics, 2018  
[paper] [video] [thesis presentation]
- **Rigid-body Collaborative Manipulation among Remote Users with Wearable Cutaneous Haptic Interfaces,**  
Myungsin Kim, WonHa Lee, Hyojoon Park, Junghan Kwon, Yong-Lae Park, and Dongjun Lee, AsiaHaptics, 2018  
[paper] [video]
- **Design and Performance Evaluation of Wearable Haptic Interfaces,**  
WonHa Lee, Myungsin Kim, Hyojoon Park, and Dongjun Lee, International Conference on Control, Automation and Systems, 2018
- **Wearable Cutaneous Haptic Interface with Soft Sensors and IMUs,**  
Yongjun Lee, Myungsin Kim, Yongseok Lee, Hyojoon Park, and Dongjun Lee, Korea Robotics Society Annual Conference, 2018

## WORK EXPERIENCES

### University of Utah

*Graduate Research Assistant (Advisor: Prof. Ladislav Kavan)*

*Sep. 2019 - May 2021*

*Utah, USA*

· Open sourced multi-camera calibration codes: [github.com/hjoonpark/MultiCamCalib](https://github.com/hjoonpark/MultiCamCalib)

### Korea Institute of Science and Technology (KIST)

*Intern Researcher at CHIC (Center of Human-centered Interaction for Coexistence)*

*Mar. - Aug. 2019*

*Seoul, Korea*

- Developed a VR hand rendering framework for wearable fingertip tracking devices (published to IROS 2020)  
[paper] [video]

#### **Engineering School in KAIST New Education**

Sep. 2014 - Feb. 2015

*(Korea Advanced Institute of Science and Technology)*

Seoul, Korea

- Led "Arduino-based Exploration Robot" and "Developing Android Service App" classes

#### **Military Service**

Jun. 2011 - Mar. 2013

*Republic of Korea Army (ROKA) as Military English Interpreter*

21 months

#### **TEACHING ASSISTANT**

**Computer Graphics (CS559)**, University of Wisconsin-Madison

Spring 2022

**Computer Graphics (CS559)**, University of Wisconsin-Madison

Fall 2021

**Interactive Computer Graphics (CS6610)**, University of Utah

Spring 2021

**Computer Graphics (CS4600)**, University of Utah

Fall 2020

**System Analysis in Mechanical Engineering**, Seoul National University

Spring 2018

#### **AWARDS**

##### **Outstanding MS Thesis Presentation Award**

Dec. 2018

*Department of Mechanical Engineering*

Seoul National University

- Topic: Dental Simulator with Increased Z-width of Haptic Rendering  
[video] [thesis presentation]

##### **Award of Excellence**

Fall 2013

*English-Mediated Course Tutor: Writing*

Korea University

#### **SCHOLARSHIPS**

**Merit-based Scholarship**, Seoul National University

Spring 2018

**National Scholarship**, Korea University

Spring 2016

**Future Scholarship**, Korea University

Spring 2016