

# Hongsuk Benjamin Choi

## PERSONAL DETAILS

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## EXPERTISE

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Machine Learning and Computer Vision. In-depth Experience in 3D Computer Vision, AR/VR, Robotics Perception, NeRF, Motion Capture, and Object Tracking.

Over **500 citations**, three active GitHub projects with total **850 stars**. **4 first author** papers in top CV/ML conferences (**CVPR**, **ECCV**, **ICLR**). Got **EB1** (Outstanding Researcher) approval from USCIS.

## EDUCATION

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**M.S.**, Electrical and Computer Engineering Mar 2020 - Feb 2022  
Seoul National University (SNU), Seoul, South Korea  
Advisor: [Prof. Kyoung Mu Lee](#)

**B.S.**, Computer Science and Engineering Mar 2015 - Feb 2020  
Seoul National University (SNU), Seoul, South Korea

## WORK EXPERIENCE

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### Machine Learning Researcher

- Hand Force Estimation from Vision
- 6D Object Pose Estimation for Robotics
- Metric-scale Human Reconstruction
- Reactive Human Tracking/Following with Mobile Robots
- Hand-Object Interaction Scene Reconstruction
- User friendly floor plan generation from Lidar data June 2022 - Present  
Samsung AI Center, New York, USA

### Visiting Researcher

- Data Augmentation for  
3D Human Pose and Shape Estimation Mar 2022 - May 2022  
NAVER AI LAB, Seoul, Korea

### Research Intern

- Neural Human Rendering for an Arbitrary Person  
with Implicit Function (NeRF) Apr 2021 - Oct 2021  
NAVER LABS Europe, Grenoble, France  
Advisor: [Gregory Rogez](#), Vincent Leroy

### Research Intern

- 3D Human Pose Estimation from a Single Image Aug 2019 - Feb 2020  
Department of Electrical and Computer Engineering, SNU  
Advisor: [Prof. Kyoung Mu Lee](#)
- Pedestrian Tracking from a Drone Captured Video Mar 2019 - Jul 2019  
Department of Electrical and Computer Engineering, SNU  
Advisor: [Prof. Kyoung Mu Lee](#)

### Teaching Assistant

- Introduction to Computer Programming Mar 2019 - Dec 2020  
Department of Business Administration, SNU

### Software Engineer Intern

- Android App Development for Movie Trailer Play in AR Jun 2018 - Aug 2018  
NAVER, Seoul, Korea

### Start-Up Team Leader & Software Engineer

- WebApp Development for Workout Social Media Jul 2017 - Feb 2019  
Publicly launched at App Store & Google Play Store

## PUBLICATIONS

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- [1] **Hongsuk Choi**, Volkan Isler, Hyunsoo Park, “HandNeRF: Learning to Synthesize Hand-object Interaction Scene”, under review
- [2] **Hongsuk Choi**, Hyeongjin Nam, Taeryung Lee, Gyeongsik Moon, Kyoung Mu Lee, “Rethinking Self-Supervised Visual Representation Learning in Pre-training for 3D Human Pose and Shape Estimation”, **ICLR 2023**, [\[ARXIV\]](#)
- [3] Gyeongsik Moon, **Hongsuk Choi**, Sanghyuk Chun, Jiyoung Lee, Sangdoo Yun, “Three Recipes for Better 3D Pseudo-GTs of 3D Human Mesh Estimation in the Wild”, **CVPR 2023 workshop**
- [4] Gyeongsik Moon, **Hongsuk Choi**, Kyoung Mu Lee, “NeuralAnnot: Neural Annotator for 3D Human Mesh Training Sets”, **CVPR 2022 workshop**, [\[ARXIV\]](#)[\[CODE\]](#)
- [5] Gyeongsik Moon, **Hongsuk Choi**, Kyoung Mu Lee, “Accurate 3D Hand Pose Estimation for Whole-Body 3D Human Mesh Estimation”, **CVPR 2022 workshop**, [\[ARXIV\]](#)[\[CODE\]](#)
- [6] JoonKyu Park, Yeonguk Oh, Gyeongsik Moon, **Hongsuk Choi**, Kyoung Mu Lee, “HandOccNet: Occlusion-Robust 3D Hand Mesh Estimation Network”, **CVPR 2022**, [\[ARXIV\]](#)[\[CODE\]](#)
- [7] **Hongsuk Choi**, Gyeongsik Moon\*, Matthieu Armando, Vincent Leroy, Kyoung Mu Lee, Gregory Rogez, “MonoNHR: Monocular Neural Human Renderer”, **3DV 2022**, [\[ARXIV\]](#)[\[VIDEO\]](#)
- [8] **Hongsuk Choi**, Gyeongsik Moon, Joonkyu Park, and Kyoung Mu Lee, “Learning to Estimate Robust 3D Human Mesh from In-the-Wild Crowded Scenes”, **CVPR 2022**,

[\[ARXIV\]](#)[\[CODE\]](#)

[9] **Hongsuk Choi**, Gyeongsik Moon, Ju Yong Chang, and Kyoung Mu Lee, “Beyond Static Features for Temporally Consistent 3D Human Pose and Shape from a Video”, **CVPR 2021**, [\[ARXIV\]](#)[\[VIDEO\]](#)[\[CODE\]](#)

[10] **Hongsuk Choi**, Gyeongsik Moon, and Kyoung Mu Lee, “Pose2Mesh: Graph Convolutional Network for 3D Human Pose and Mesh Recovery from a 2D Human Pose”, **ECCV 2020**, [\[ARXIV\]](#)[\[PDF\]](#)[\[VIDEO\]](#)[\[CODE\]](#)

## PROJECTS

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A Large-scale Dataset for 3D Human Pose and Mesh Estimation    May 2020 - Dec 2020  
[Dataset link](#) / co-op with SweetK and MotionTechnology

HumanFit: A New Large-scale Dataset for Human Fitness  
Evaluation and Feedback    May 2020 - Dec 2020  
[Dataset link](#) / co-op with SuperbAI, KakaoBrain

Human tracking and counting from Drone images  
(Data collection and Model development)    Mar 2019 - May 2019  
co-op with Ministry of Science and ICT, Korea

Human Part Segmentation for AI-based Animation Coloring    Mar 2019 - Jun 2019  
co-op with NCSoft

## HONORS

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**Distinguished** Master Dissertation Award, Seoul National University, 2022

Selected as a finalist in **Qualcomm Innovation Fellowship Korea**, 2020 & 2021

**1st place** and **2nd place** at the *without association* track of **3D human pose estimation in the wild (3DPW) challenge**, workshop conjunction with **ECCV 2020** (1st in a joint orientation metric and 2nd in a joint position metric), 2020

**1st place** at the Qualcomm IT Tour presentation competition held by Qualcomm, proposed AR-based workout coaching system and selected as a winner by Jim Cathey (President of Qualcomm Global Business), 2019

## SKILLS

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PYTHON, TENSORFLOW, PYTORCH, PYRENDER, C, JAVA, ANDROID, ROS, VICON  
MOTION CAPTURE, TACTILE FORCE SCANNING, ANGULARJS, TYPESCRIPT, L<sup>A</sup>T<sub>E</sub>X

## SOMETHING DIFFERENT

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I enjoy bouldering (indoor climbing) with friends on weekends. I go to a gym almost every day. Benjamin is the English name I used when I lived in Bristol, the U.K. American pop and J-pop are my favorite music. At college, I played an electric guitar in a rock band. I used to play LOL (e-sports) a lot.