Personal Information

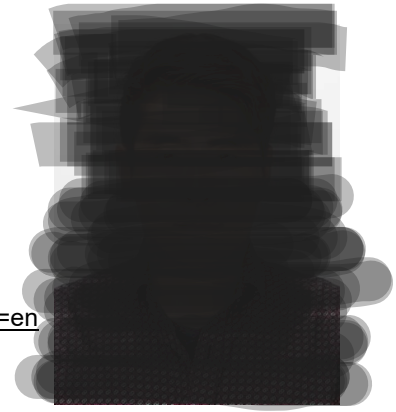**HyunJun Jung**   hyunjun.jung@tum.de
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Education_____

[05.2020 – ongoing]   **PhD Candidate in 3D Computer Vision**
                        Technische Universität München (TUM) - Munich, Bavaria, Germany.

- Published 6 research papers at top tier conferences (incl. **CVPR, NeurIPS**) as a main author, one under review.
- PhD Candidate at the Chair for Computer Aided Medical Procedures (CAMP) led by Prof. Dr. Nassir Navab. supervised by Dr. Benjamin Busam. Collaboration with Huawei Noah's Ark lab London.
- Areas of research include: 3D computer vision, high quality dataset annotation, depth estimation, 3D Guassian Splatting on Human.
- Teaching assistant in lecture, practical and seminar courses in the 3D computer vision field offered for MSc students.

[10.2017 – 03.2020]   **Master of Science in Bio Medical Computing**
                        Technische Universität München (TUM) – Munich, Bavaria, Germany.

- Graduated with an average grade of 1.2, with high distinction.
- Focused on 3D Computer Vision. Worked on 6D Pose estimation for the MSc thesis .

[09.2010 - 10.2016]   **Bachelor of Engineering in Rehabilitation Engineering**
                        Yonsei University – South Korea.

- Graduated with an average grade of 3.99 / 4.3 as student representative in the ceremony.
- National Scholarship for Science and Engineering by Korea Student Aid Foundation (4 years full).
- 3rd award in Rehabilitation Idea Competition held by Assistive Technology Research Assistance Center, Korea.
- Certificate of Merit in Engineering Medical Innovation Global Competition held by CUHK.

[03.2007 - 02.2010]   **Secondary Schooling**
                        Dongin High School – Busan, South Korea.

Research Interests_____

- Animatable and relightable human avatar generation using Gaussian Splatting with SMPL prior
- Noisy sensor depth prior indoor scene reconstruction
- Category level 6D pose estimation
- Annotation and capturing of high quality indoor dataset

Projects and Work Experience_____

[06.2024 – 12.2024]   **Research Scientist Intern (Meta)**
- Research on Relightable and Animatable 3D Gaussian Avatar
  (Internship extended for publication in ICCV 2025)

- Postprocess and improve human annotation on custom human dataset capturing setup

[10.2019 – 03.2020] **Research Assistant in University** (Technical University of Munich)
- Implementing custom PyTorch data feed class for Lyft Dataset (https://level-5.global/data/)
- Assisting the follow up research based on PointRCNN (https://github.com/sshaoshuai/PointRCNN)

[11.2018 – 02.2019] **Autonomous Garbage Collector using 3D Computer Vision and Reinforcement Learning**
- Using Reinforcement Learning to train vision based agent to collect garbage in the virtual environment. Agent perceives the world by one hot segmented multi class view fused with depth image. Unity 3D was used to simulate environment and generate visual observation, and ml-agents API(Tensorflow) was used Reinforcement Learning pipeline.
- Role : Setting up Unity 3D environments for Reinforcement Learning and training (Unity ML Agent), Modifying Unity ML Agent Python API for 3D Vision tasks (Tensorflow)
- Result : https://dtransposed.github.io/blog/GEAR (blog)
  https://github.com/dtransposed/Reinforcement-Learning-With-Unity-G.E.A.R (repo)

[08.2018 – 10.2018] **Full-Time work student**
- Worked as a research assistant position at FRAMOS Gmbh (Taufkirchen, Germany)
- Implementing the State-of-the-Art Stereo depth estimation Network for IntelRealsense.

[08.2015 – 03.2016] **Developing Bilateral Training System for Hemiparesis Rehabilitation**
- Developing flex sensor based glove to detect flexion of fingers / simple exoskeleton to mimic the flexion of fingers in the other hand, and software with rehabilitation games to help emiparesis patient train and track their progress.
- Role : Programming part. (PyQt GUI, Rehabitation games, Communication with Bluetooth devices, Data visualization).
- Award : Certificate of Merit in Engineering Medical Innovation Global Competition held by CUHK. 3rd award in Rehabilitation Idea Competition held by Assistive Technology Research Assistance Center, Korea.

Publications_____

- B. Busam, HJ. Jung, N. Navab – I like to move it: 6d pose estimation as an action decision process. arXiv preprint arXiv:2009.12678.

- HJ. Jung, N. Brasch, A. Leonardis, N. Navab, B. Busan – Wild ToFu: Improving Range and Quality of Indirect Time-of-Flight Depth with RGB Fusion in Challenging Environments. In IEEE **3DV**, 2021 **(Oral)**.

- PY. Wang*, HJ. Jung*, Y. Li, S. Shen, R. Srikanth, L. Garattoni, S. Meier, N. Navab, B. Busam – PhoCaL: A Multi-Modal Dataset for Category-Level Object Pose Estimation with Photometrically Challenging Objects. Accepted at IEEE/CVF **CVPR**, 2022.

- J. Wittmann, F. Pachler, P. Ruhkamp, HJ. Jung, F. Sygulla, D. Rixen – Robotic Framework for Autonomous Assembly: a Report from the Robothon 2021 Grand Challenge. Accepted In IEEE **ICARSC**, 2022.

- D. Gao, Y. Li, P.Ruhkamp, I. Skobelva, M. Wysock, HJ. Jung, PY. Wang, A. Guridi, N. Navab, B. Busam – Polarimetric Pose Prediction. Accepted at **ECCV**, 2022.

- G. Zhai, D.Huang, SC. Wu, HJ. Jung, Y.Di, F.Manhardt, F. Tombari, N.Navab, B. Busam – MonoGraspNet: 6-DoF Grasping with a Single RGB Image, Accepted at **ICRA**, 2023

- HJ. Jung*, P. Ruhkamp*, G. Zhai, N. Brasch, Y. Li, Y. Verdie, J. Song, Y. Zhou, A. Armagan, S. Ilic, A. Leonardis, B. Busam – On the Importance of Accurate Geometry Data for Dense 3D Vision Tasks. Accepted at **CVPR**, 2023

- S. Gasperini, N. Morbitzer, HJ. Jung, N.Navab, F. Tombari – Robust Monocular Depth Estimation Under Challenging Conditions, Accepted at **ICCV**, 2023

- HJ. Jung*, SC. Wu*, P. Ruhkamp*, G. Zhai*, H. Schieber*, P. Wang, G. Rizolli, H. Zhao, S.Meier, D.Roth, N. Navab, B. Busam – HouseCat6D-A Large-Scale Multi-Modal Category Level6D Object Pose Dataset with Household Objects in Realistic Scenarios, Accepted at **CVPR**, 2024 **(Highlight)**

- HJ. Jung, W. Li, SC. Wu, W. Bittner, N. Brasch, J. Song, E Perez-Pellitero, Z. Zhang, A. Moreau, N. Navab, B. Busam – SCRREAM : SCan, Register, Render And Map : A Framework for Annotating Accurate and Dense 3D Indoor Scenes with a Benchmark, Accepted at **NeurIPS (**Dataset and Benchmark track), 2024

- HJ. Jung, N. Brasch, J. Song, E. Perez-Pellitero, Y. Zhou, N. Navab, B. Busam – Deformable 3D Gaussian Splatting for Animatable Human Avatars, https://arxiv.org/abs/2312.15059

- W.Li*, X.Xu*, J.Huang*, HJ.Jung*, PKT.Yu, N.Navab, B.Busam – GCE-Pose: Global Context Enhancement for Category-level Object Pose Estimation, Accepted at **CVPR**, 2025

* the authors contributed equally.

Extra Curriculars

[06.2011 - 03.2013] **Mandatory Military Service**
Korean Augmentation to the United States Army (KATUSA)**,** Sergeant

- Worked as a M1 Armor Crewman, Gunner.
- Awards : Certificate of Appreciation for excellent service in United States Forces Korea
  Certificate of Achievement for achieving top score during Winter Gunnery
  Certificate of Achievement for excellence during Summer Gunnery
  Certificate of Achievement for achieving tor score during Winter Gunnery (2012)
  Award for outstanding Achievement in Army Physical Fitness Test
  Certificate of Achievement for winning Solder of the Month board

Personal Skills

Languages: Korean (native), English (full proficiency), German (~A2, learning)
Technical skills: 3D Computer Vision, Deep Learning, Machine Learning, Artificial Intelligence, Python, PyTorch, TensorFlow, C++, C#, Matlab, Linux, Windows, Microsoft Office, ROS (Python), Camera Calibration, Unity3D