

Hiroyuki Deguchi

PhD Student at Keio Univ.

[Email](#) / [Website](#) / [Google Scholar](#)

I am pursuing my first year as a PhD candidate at Keio University under the guidance of Prof. Hideo Saito. My research focuses on computer vision, especially egocentric vision, human motion capture, and 3D human reconstruction using multimodal sensors. More broadly, I am interested in human-centered visual understanding and in building robust vision systems that connect perception in the real world with digital human modeling, with a long-term interest in humanoid applications.

Education

Keio University, Yokohama, Japan

- Ph.D. in Information and Computer Science 2025.10 – Present
- M.E. in Science for Open and Environmental Systems 2024.4 – 2025.9
- B.E. in Information and Computer Science 2020.4 – 2024.3

Research Experience

National Institute of Advanced Industrial Science and Technology (AIST) 2024.5 – Present

Research Assistant in Digital Human Research Team, Artificial Intelligence Research Center

Publications

Conference Proceedings

- **H. Deguchi***, M. Masuda*, T. Nakabayashi, and H. Saito, **E2GS: Event Enhanced Gaussian Splatting**
In Proceedings of the 2024 IEEE International Conference on Image Processing (ICIP), pp.1676–1682, 2024. DOI: 10.1109/ICIP51287.2024.10647607.
- **H. Deguchi**, Ryosuke Hori, Kotaro Amaya, Tsubasa Maruyama, Mitsunori Tada, Hideo Saito
Map-Mono-Ego: Map-Grounded Global Human Pose Estimation from Monocular Egocentric Video
In Proceedings of the 2026 IEEE International Conference on Image Processing (ICIP)

Journal Articles

R. Hori, **H. Deguchi**, T. Maruyama, M. Tada, and H. Saito, **Gait Inertial Poser (GIP): Gait-Aware Human Motion Capture Using Shoe-Embedded IMUs**, in *IEEE Access*, vol. 13, pp. 183262-183282, 2025, doi: 10.1109/ACCESS.2025.3624393

Workshop Papers

H. Deguchi*, R. Hori*, T. Maruyama, M. Tada, and H. Saito, **Realtime Smart Gait Poser for Foot Augmentation**, CHI 2025 Workshop, 2025.

Awards and Honors

- MIRU (Meeting on Image Recognition and Understanding) 2023, Demo Presentation Award (2023.7)
- Keio University, Nakanishi Encouragement Award (2024.2)

Grants and Scholarships

- JST BOOST (Broadening Opportunities for Outstanding young researchers and doctoral students in Strategic area) (2025.10 – 2028.9)
- Keio University Research Encouragement Scholarship for Graduate Students (2026. 6)

Industry Experience

- NEC Corporation, R&D Intern, Japan (2024.8 – 2024.9)
 - Data augmentation for human pose estimation using image generation
- Sony Semiconductor Solutions Corporation, R&D Intern, Japan (2025.2)
 - Exploratory testing of camera pose estimation using Spresense multi-IMU sensors

Technical Skills

- **Programming:** Python (for machine learning and computer vision)
- **Libraries / Topics:** OpenCV, Numpy, PyTorch, scikit-learn, Github, Linux, Docker, etc.
- **Research Topics:** 3D Vision, Human Pose Estimation, Egocentric Vision, etc.

Languages

- **Japanese:** Native
- **English:** Working proficiency

Additional Information

- **English Conversation:** Taking regular English conversation lessons with a native English instructor
- **Other Interests:** Dance (Locking), Drinking (Beer, Whiskey, Japanese sake, etc.), Traveling
- **Leadership Experience:** Organising study sessions in the lab, acting as a mentor to junior colleagues