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Seungwook Kim

Research Scientist, PhD Candidate

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I am Seungwook Kim, a highly self-motivated PhD candidate mainly researching on **visual correpsondences of 2D images or 3D point clouds**, and their applications. I am under the supervision of professor Minsu Cho in the POSTECH Computer Vision Lab.

Skills

Languages & Frameworks	**Python**, **PyTorch**, **Keras** C, C++, LaTeX, MarkDown
Quantitative Research	MySQL, PostgreSQL, AWS RedShift (but mostly MS Excel)
Communication	Korean (native), English (native), Chinese Mandarin (elementary)

Technical Experience

PhD Candidate / Research Scientist — **08 2020 — Present**
POSTECH Computer Vision Lab — *Pohang, South Korea*

- 2D Visual Correspondence, a.k.a wide-baseline/semantic image matching.
- 3D Visual Correspondence, a.k.a point cloud registration.
- 2D / 3D equivariance to rotation / scale (joint work with Samsung MX)
- Reviewer for: WACV 2022/2023, CVPR 2022, ECCV 2022, 3DV 2022

Undergraduate Intern / 3D Map construction from LiDAR — **03 2020 — 07 2020**
Polaris3D — *Pohang, South Korea*

- Implemented the process of retrieving data from Intel Realsense cameras to Jetson Nano in real-time.
- Merged the two streams of data from two different angles to output a 3D map in real-time.

Undergraduate Intern / Camera ISP — **12 2019 — 01 2020**
SK Hynix — *Icheon, South Korea*

- Analyzed the image post-processing algorithms applied to raw images obtained from senseors.
- Identified an imbalance in the dark corners (vignetting) of a raw image from a sensor under development.

Undergraduate Intern / AI team — **06 2019 — 08 2019**
Netmarble — *Seoul, South Korea*

- Developed prior speech-to-3D lip synthesis pipeline to be light-weight (mobile-runnable) using TensorFlow.

Undergraduate Intern / Data Engineering & Analysis team — **02 2018 — 12 2018**
Dable — *Seoul, South Korea*

- Analyzed heavy-traffic raw data collected at AWS RedShift using PostgreSQL.
- Developed batch codes that run regularly on the AWS RedShift to output processed data on a MySQL server.
- Analyzed processed data using MySQL.
- Developed web crawling code to identify potential blog clients.

Education

Bachelor of Engineering in Computer Sciences and Engineering, *POSTECH* — 07 2020
Cumulative GPA: 3.70 / 4.3
Jigok Scholarship (Full scholarship) — 2015 — 2020
Student Mentoring Program Scholarship (Monthly scholarship) — 2017 — 2020
On-school Work Scholarship (Per-semester scholarship) — 2017 — 2020

Bachelor of Engineering in Computer Sciences and Engineering, *Seoul National University* — 12 2017 — 01 2018
Winter session

Publications

[R] Convolutional Hough Matching Networks for Robust and Efficient Visual Correspondence — Under Review
*Juhong Min, **Seungwook Kim**, Minsu Cho*

[W1] SeLCA: Self-Supervised Learning of Canonical Axis — NeurReps Workshop 2022
***Seungwook Kim**, Yoonwoo Jeong, Chunghyun Park, Jaesik Park, Minsu Cho*

[C3] TransforMatcher: Match-to-Match Attention for Semantic Correspondence — CVPR 2022
***Seungwook Kim**, Juhong Min, Minsu Cho*

[C2] Deep Hough Voting for Robust Global Registration — ICCV 2021
*Junha Lee, **Seungwook Kim**, Minsu Cho, Jaesik Park*

[C1] Learning to Distill Convolutional Features into Compact Local Descriptors — WACV 2021
*Jongmin Lee, Yoonwoo Jeong, **Seungwook Kim**, Juhong Min, Minsu Cho*