



Yonwoo Choi

AI Research Engineer



Contact

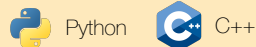
Address: Gwacheon, South Korea

Mobile: +82 10-2519-6658

Email: yhugestar@gmail.com

Skills

Programming



Libraries



Teaching

TA, Seoul National University

4190.408 - Artificial Intelligence

4190.773 - 3D Computer Vision

Coursework

Seoul National University

Multimodal Deep Learning

Advanced Graphics

Advanced Data Mining

Mobile and Ubiquitous Computing

University of Virginia

Algorithms

Data Structures

Web Application

Software Testing

Computer Architecture

Human Computer Interaction

Software Development Methods

References

Hanbyul Joo

Assistant Professor at Seoul National University

hbjoo@snu.ac.kr

Raymond Pettit

Associate Professor at University of Virginia

raymond.pettit@virginia.edu

Education



Seoul National University

Master of Science in Computer Science and Engineering

Advisor: [Hanbyul Joo](#)

Thesis: A Wrist Mounted Camera System for Hand Pose Estimation from Single RGB Images

GPA: 3.73/4.3

Seoul, South Korea

Mar 2022 - Feb 2024



University of Virginia

Bachelor of Arts in Computer Science

GPA: 3.93/4.0

Charlottesville, VA

Aug 2017 - May 2021

Work Experience



CUBOX

AI Research Engineer

3D Face/Body/Hands Reconstruction, Facial Performance/Appearance Capture

3D Face Generation/Synthesis

Alternative Military Service (전문연구요원)

Seoul, South Korea

Mar 2024 - Present



Visual Computing Lab

Graduate Researcher

Research in 3D Computer Vision, Human Pose Estimation, Reconstruction, Motion Capture System

Seoul, South Korea

Nov 2021 - Feb 2024

Projects

Wrist Mounted Camera System for Hand Pose Estimation

Feb 2023 - Nov 2023

- Integrated 3 GoPro cameras and built hand motion capture system
- Developed a pipeline for collecting pseudo-ground-truth 3D hand pose data
- Implemented training code for baseline models
- Trained SOTA hand pose estimators with collected hand pose data and achieved superior results on existing benchmarks
- Enhanced hand bounding box detection with 3D Computer Vision techniques

Egocentric 3D Human Pose Estimator

Sep 2022 - Jan 2023

- Implemented unreleased training code, neural network architecture, data augmentation strategies from the paper "xR-Egopose" (ICCV 2019) which takes an image captured from an egocentric fisheye camera and outputs 3D human joints
- Achieved Mean per Joint Position Error (MPJPE) of 64mm compared to 59mm in the original paper

Multi-camera 3D Human Joint Reconstruction

Apr 2022 - Sep 2022

- Captured real world human pose data using GoPro cameras from 5 views
- Performed camera calibration to find camera parameters using Matlab's calibration toolbox
- Direct Linear Transform, Triangulation, Non Linear Optimization methods to reconstruct 3D human joints from 2D joints

Structure from Motion

Apr 2022 - May 2022

- Implemented the classical Structure from Motion (SfM) algorithm to reconstruct 3D point cloud scene from multiple images
- Implemented methods include Bundle Adjustment, Triangulation, Perspective-n-Point Algorithm

Panorama Generator

Feb 2022 - Apr 2022

- Created a panorama generator which takes a set of images of pure rotation as input, and creates a panoramic image
- Estimated Homograph Matrix by using correspondences between points in images and solving a system of linear equations
- Constructed Cylindrical Coordinates to help minimize distortion in wide-angle panoramas