

Jung-Hyun Byun

computer scientist majoring in augmented reality

contact

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[GitHub]
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languages

Korean (native)
English (fluent)

programming

C++ (skilled)
Python/CUDA/Matlab/
Java (beginner)

skills

OpenCV, OpenGL,
openFrameworks

Interests

computer vision, computer graphics, machine learning and human-computer interaction
augmented reality, projection mapping, point cloud processing and scene reconstruction

Education

2015.9.1 –2020.8.31	Ph.D. candidate in Computer Science	Yonsei University, Korea
2011.3.1 –2015.2.28	B.Sc. in Computer Science and Engineering	Yonsei University, Korea

Projects

2018.09.01 –2020.08.31	Integration of Context-aware Pervasive AR Platform for Personal Assistant Implementation National Research Foundation of Korea, 266K USD/year Role: Principal Investigator & Lead Researcher <ul style="list-style-type: none">Investigating applicability of deep learning-based spatial context-awareness in an augmented reality environment.Investigating integration of scene understanding technologies with projection-based augmented reality.Investigating real-time dynamic projection mapping on a pan-tilt platform.
2018.04.30 –2018.10.31	Development of hand motion recognition technology based on sensor fusion Samsung Electronics Company, 48K USD/year Role: Project Manager <ul style="list-style-type: none">Managed implementation of algorithms for identifying hand postures of workers using IMU sensor data.
2015.11.01 –2018.10.31	Pervasive AR interaction platform construction using a mobile projection technology National Research Foundation of Korea, 264K USD/year Role: Project Manager & Lead Researcher <ul style="list-style-type: none">Designed a user-perspective rendering algorithm for correcting distortions of projection mapping caused by surface geometry.Designed a visual servoing algorithm for accurately controlling pan-tilt servo motors based on rotation axis calibration.

- 2015.08.01 –2017.03.31 **Development of filming and rendering technology based on multi-autonomous flight collaboration for large-scale performance and broadcasting** Korea Institute of Science and Technology, 26K USD/year
Role: Researcher & Developer
- Designed and implemented scale-adaptive visual object tracking algorithm based on SVM.
 - Developed a Windows program for tracking multiple objects based on epipolar geometry.
- 2015.04.01 –2017.12.31 **Research of vision-based mobile object recognition technology for life logging** Korea Institute of Science and Technology, 44K USD/year
Role: Researcher & Developer
- Implemented keypoint extraction and descriptor matching algorithms on an Android platform.
 - Developed Android applications for marker-less augmented reality and medicine recognition.

Publications

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Proceedings at peer-reviewed conferences

Accurate Control of a Pan-tilt System Based on Parameterization of Rotational Motion

Byun, Jung-Hyun, Chae, S., Han, T.,

EG 2018 - Short Papers, The Eurographics Association, 2018

AIR: Anywhere Immersive Reality with User-Perspective Projection

Byun, Jung-Hyun, Chae, S., Yang, Y., Han, T.,

EG 2017 - Short Papers, The Eurographics Association, 2017

A dynamic depth-variable ray-casting interface for object manipulation in ar environments

Ro, H., Chae, S., Kim, I., **Byun, Jung-Hyun**, Yang, Y., Park, Y., Han, T.,

Systems, Man, and Cybernetics (SMC), IEEE International Conference on, 2017

Scale-adaptive tracking with structured output

Byun, Jung-Hyun, Chae, S.-H., Choi, H., Han, T.-D.,

Proceedings of HCI Korea, 2016

Personal Smart Space: IoT based User recognition and Device control

Chae, S., Yang, Y., **Byun, Jung-Hyun**, Han, T.-D.,

Semantic Computing (ICSC), IEEE Tenth International Conference on, 2016

Smart advisor: Real-time information provider with mobile augmented reality

Chae, S., Yang, Y., Choi, H., Kim, I., **Byun, Jung-Hyun**, Jo, J., Han, T.,

Consumer Electronics (ICCE), IEEE International Conference on, 2016