

HYUNWOO CHO

Email : nonoriri86@gmail.com / (secondary) nonoriri@etri.re.kr

Address : Room 655, 7 bldg., Electronics and Telecommunications Research Institute, Daejeon, Republic of Korea

Personal webpage : <https://hwoocho.github.io/online-cv/>

Citations : <https://scholar.google.co.kr/citations?user=6WDQQRAAAAAJ&hl=en>

RESEARCH INTERESTS

Augmented Reality / Virtual Reality
Human-Computer Interaction (Natural User Interface, Interaction Design)
Computer Vision (SLAM / 3D Reconstruction / Segmentation / Feature Descriptor)

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)

M.S., Computer Science 2012

Research Topic: Augmented reality-based content authoring interface (HCI, AR/VR)

2010-2012

Thesis: "Efficient 3D content authoring framework based on mobile AR"

Advisor: Hyun S. Yang

Kyungpook National University (KNU)

B.S., Electrical Engineering and Computer Science 2010

2006-2010

CAREER

Electronics and Telecommunications Research Institute (ETRI)

Researcher, Creative Content Research Division SW-Content Research Laboratory

2012-Now

Research Project (2018-Now): Development of participational AR platform for large-scale cultural space

- Researches of a feature based SLAM for AR tracking
- Researches of HCI Issues in Augmented Reality

Research Project (2014-2017): Development of personalized and creative learning tutoring system based on participational interactive contents and collaborative learning technology

- Researches and developments of an AR based real-time broadcasting system
- Researches and developments on an 3D AR education system for children
- **Technology transfer of the AR broadcasting system and the 3D AR education system**
(11 companies, about 450,000 USD)

Research Project (2012-2013): Development of learner-participational and interactive 3D Virtual learning contents technology

- Developments on a mobile AR platform
- Researches of AR contents authoring and a planar target recognition and tracking
- **Technology transfer of the mobile AR platform**
(6 companies, about 160,000 USD)

TECHNICAL SKILLS

Programming Language: C, C++, C#, Java, Objective C, Python

Mobile Programming: iOS, Android

Libraries and Tools: OpenCV, PCL, TensorFlow

Graphics Engine: Unity3D, OpenGL

PUBLICATIONS

International Conferences

ARStudio: AR Broadcasting System based on Multiple RGB-D Cameras

Hyunwoo Cho, Sung-Uk Jung, Suwon Lee, Young-Suk Yoon, Sangheon Park, Hyung-Keun Jee

International Conference on ICT Convergence (ICTC 2018)

2018

Real-time interactive AR system for broadcasting

Hyunwoo Cho, Sung-Uk Jung, Hyung-Keun Jee

IEEE Virtual Reality (VR2018)

2017

An AR-based safety training assistant in disaster for children

Sung-Uk Jung, **Hyunwoo Cho**, Hyung-Keun Jee

SIGGRAPH ASIA 2016

2016

Efficient 3D content authoring framework based on mobile AR

Sang-Wook Lee, Jinki Jung, Jihye Hong, Suwon Lee, **Hyunwoo Cho**, Hyun S Yang

Virtual Systems and Multimedia (VSMM2012)

2012

AR postcard: the augmented reality system with a postcard

Hyunwoo Cho, Jinki Jung, Kyusung Cho, Yong-Ho Seo, Hyun S Yang

ACM SIGGRAPH International Conference on Virtual Reality Continuum and Its Applications in Industry (VRCAI2011)

2011

An interactive bulletin board with mobile devices

Hyunwoo Cho, Kyusung Cho, Hyun S Yang

ACM SIGGRAPH International Conference on Virtual Reality Continuum and Its Applications in Industry (VRCAI2010)

2010

Domestic Journals

E-Learning Technology Trends

J.A. Noh, S.J. Lee, J.H. Yun, **H.W. Cho**, S.B. Kang

2014 Electronics and Telecommunications Trends

2014

PATENTS

System and method for diagnosis mass attributes of leaner

Korea Patent Pending, 2016-0161793, Co-inventor

2016

Augmented reality system linked to smart device

Korea Patent Pending, 2016-0157521, Co-inventor

2016

Contents authoring tool for augmented reality based on space and thereof method

Korea Patent Pending, 2016-0105517, Co-inventor

2016

PROVIDING APPARATUS FOR AUGMENTED REALITY SERVICE, DISPLAY APPARATUS AND PROVIDING SYSTEM FOR AUGMENTED REALITY SERVICE COMPRISING THEREOF

Korea Patent Pending, 2016-0000284, Co-inventor

2015

Augmented Reality device based on recognition spatial structure and method thereof

US Patent, 9892323, Co-inventor

2015

Apparatus and method for object recognition with convolution neural network

Korea Patent Pending, 2015-0125393, Co-inventor

2015

Apparatus and method for extracting person domain based on RGB-Depth image

Korea Patent Pending, 2015-0125417, Co-inventor

2015

AUGMENTED REALITY-BASED HAND INTERACTION APPARATUS AND METHOD USING IMAGE INFORMATION

US Patent, 9881423, Co-inventor

2014

Apparatus and method for implementing immersive augmented reality with RGB-D data

Korea Patent Pending, 2014-0125198, Co-inventor

2014

Sub-region based recognition method for an augmented reality under cluttered background

Korea Patent, 1694309, Co-inventor

2013

Freehand pointing processing apparatus using body information

Korea Patent, 1849414, Co-inventor

2012

RESEARCH EXPERIENCES

Development of participational AR platform for large-scale cultural space

Researcher

Developed a multi-user based collaborative map optimization using feature based SLAM.

March 2018 - Now

ARStudio: Real-time Interactive AR System for Broadcasting

Project manager, Researcher

Proposed an AR based real-time broadcasting system which perceives the indoor space using calibrated camera for broadcasting and RGB-D cameras.

March 2014 – October 2017

Performance upgrade for Makerless mobile AR platform

System engineer

Developed a self-contained mobile augmented reality system for over 1,000 planar targets using a binary descriptor.

March 2015 – December 2016

Indoor 3D AR System for Education

Researcher

Developed an AR based education system which recognizes the real space based on RGB-D, augments the virtual objects and interacts between the objects and users in real space.

March 2014 – March 2016

Makerless mobile AR platform

Researcher, System engineer

Developed a mobile AR platform composed of an AR contents authoring tool and a real-time recognition engine based on random forest.

March 2012 – March 2014

Efficient 3D content authoring framework based on mobile AR

Project manager, Researcher

Proposed a novel interaction design for 3D content authoring based on an augmented reality technique.

August 2011 – December 2011

AR Postcard: An augmented reality system with a postcard

Project manager, Researcher

Proposed a postcard system which recognizes a card using a camera within a device (PC/Smart TV/Tablet PC) and augments the video of the sender fit to the card size.

March 2011 – June 2011

Interactive bulletin board

Project manager, Researcher

Proposed a new interaction method for interchanging information between a public screen and a mobile device.

March 2010 – August 2010

TEACHING EXPERIENCES

Korea Advanced Institute of Science and Technology (KAIST)

Teaching Assistant-Computer Science 101 (Introduction to programming)

2010 Fall – 2011 Fall

AWARDS

Top 100 national R&D award from Korean government (Ministry of Science and ICT)

2016

Outstanding technology commercialization award from ETRI

2014

LEADERSHIP SKILLS

Scout Leader of Korea Scout Association (Guide for Youth)

2006-2009

Chairman of KERT, Academic Club of EECS KNU

2008

LANGUAGES

English – speak fluently and read/write with high proficiency

Korean – native language
