# JINKI JUNG

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Address : Bülowsvej 40, stuen Frederiksberg, Frederiksberg, Denmark
Personal webpage : https://jinkijung.github.io/online-cv/
Citations : http://scholar.google.co.kr/citations?user=inzigzUAAAAJ&hl=en&authuser=1

## RESEARCH INTERESTS

**Augmented Reality  / Virtual Reality**
**Human-Computer Interaction (Natural User Interface)**
**Simulation, Maritime Safety, Distributed Network System**
**Computer Vision (Multiple View Geometry / Segmentation / Pattern Recognition)**

## EDUCATION

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|---|---|
| **Korea Advanced Institute of Science and Technology (KAIST)** | |
| Ph.D., Computer Science | |
| Research Topic: Mobile Augmented Reality | **2009-2015** |
| Dissertation: "Real-time Sensor Fusion based Mobile Augmented Reality Framework" | |
| Advisor: Hyun S. Yang | |
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| **Korea Advanced Institute of Science and Technology (KAIST)** | |
| M.S., Computer Science 2009 | |
| Research Topic: Natural User Interface for Augmented Reality | **2007-2009** |
| Thesis: "A Real-time Robust Body Part Tracking System for Intelligent Environment" | |
| Advisor: Hyun S. Yang | |
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| **Soongsil University** | |
| B.S., Media Engineering 2007 | **2003-2007** |

## CAREER

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|---|---|
| **Korea Advanced Institute of Science and Technology (KAIST)** | |
| Postdoctoral researcher, Information and Electronics Research Institute | |
| Research Topic: Egocentric Hand Interaction using Depth Camera | |
| Virtual Reality for Maritime Safety Training | **2015-2016** |
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| **Korea Research Institute of Ships and Ocean Engineering (KRISO)** | |
| Postdoctoral researcher, Maritime Safety Research Division | |
| Research Topic: Virtual Reality for Maritime Safety Training | |
| Context Awareness for Maritime Safety | **2016-2019** |
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| **Digital Maritime Consultancy** | |
| Senior Software Developer, Secretariat of MCP | |
| Research Topic: Massive Ship Traffic Simulation | **2019-** |

## TECHNICAL SKILLS

**Programming Language**: C, C++, Java, Objective C, Python, PHP
**Mobile Programming**: iOS, Android
**Web Programming**: Kubernetes, Java, Node.js
**Graphics Engine**: Unity3D, UE4, OpenGL

Unity Certified Developer   **Unity Certified Developer**

## OPEN SOURCE EXPERIENCE – (https://github.com/jinkijung)

**Maritime Connectivity Platform -** https://maritimeconnectivity.net :
A globe-scale maritime communication framework (Major contributor on distributed identification system)

**Virtuality for Safety -** https://github.com/VirtualityForSafety/ :
A special interest group on safety improvement based on VR/AR (Group leader)

## PUBLICATIONS

### International Journals

*Effects of interface on procedural skill transfer in virtual training: Lifeboat launching operation study*
**Jinki Jung**, Young Joong Ahn
    Computer Animation and Virtual Worlds                                                                                    2018

*Efficient mobile AR technology using scalable recognition and tracking based on server-client model*
**Jinki Jung**, Jaewon Ha, Sang-Wook Lee, Francisco A Rojas, Hyun S Yang
    Computers & Graphics                                                                                                   2012

*Real-time recognition and tracking for augmented reality books*
Kyusung Cho, **Jinki Jung**, Sang-Wook Lee, Sang Ok Lim, Hyun Seung Yang
    Computer Animation and Virtual Worlds                                                                                    2011

### Domestic Journal

*A Virtual Sailor Training Platform for Fire Drills on Ship*
**Jinki Jung,** Jin Hyung Park
    The Journal of Navigation and Port Research                                                                              2016

*Real-time Sensor-aided Scene Analysis based on Line Graph for Mobile Augmented Reality*
**Jinki Jung**
    The Journal of Korean Institute of Information Technology                                                                 2015

### International Conferences

*Annotation vs. Virtual Tutor: Comparative Analysis on the Effectiveness of Visual Instructions in Immersive Virtual Reality*
Hyeopwoo Lee, Hyejin Kim, Diego Vilela Monteiro, Youngnoh Goh, Daseong Han, Hai-Ning Liang, Hyun
    Seung Yang, and **Jinki Jung**
    18th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2019)                                             2019

*Ensuring Safety in Augmented Reality from Trade-off Between Immersion and Situation Awareness*
**Jinki Jung,** Hyeopwoo Lee, Jeehye Choi, Abhilasha Nanda, Uwe Grünefeld, Tim Claudius Stratmann, Wilko
    Heuten
    17th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2018)                                             2018

*Guiding Smombies: Augmenting Peripheral Vision with Low-Cost Glasses to Shift the Attention of Smartphone Users*
Uwe Grünefeld, Tim Claudius Stratmann, **Jinki Jung,** Hyeopwoo Lee, Jeehye Choi, Abhilasha Nanda, Wilko
    Heuten
    17th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2018)                                             2018

*An Adaptive Augmented Reality Interface for Hand based on Probabilistic Approach*
**Jinki Jung**, Hyeopwoo Lee, and Hyun Seung Yang
    14th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2015)                                             2015

*Real-time sensor-fusion based Indoor Localization for Mobile Augmented Reality*
**Jinki Jung**, Hyeopwoo Lee, Luis Weruaga, Jamal Zemerly and Hyun Seung Yang
    20th International Conf. on Virtual Systems and Multimedia (VSMM 2014)                                                    2014

*Augmented Keyboard: a Virtual Keyboard Interface for Smart glasses*
**Jinki Jung**, Jinwoo Jeon, Hyeopwoo Lee, Kichan Kwon, Jamal Zemerly, Hyun S Yang
    ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in
    Industry (VRCAI 2014)                                                                                                    2014

*Smartphone as an augmented reality authoring tool via multi-touch based 3D interaction method*
**Jinki Jung**, Jihye Hong, Sungheon Park, Hyun S Yang
    ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in
    Industry (VRCAI 2012)                                                                                                    2012

*Efficient 3D content authoring framework based on mobile AR*

Sang-Wook Lee, **Jinki Jung**, Jihye Hong, Suwon Lee, Hyunwoo Cho, Hyun Seung Yang
  18th International Conf. on Virtual Systems and Multimedia (VSMM 2012)                          2012

*AR paint: a fusion system of a paint tool and AR*
Suwon Lee, **Jinki Jung**, Jihye Hong, JB Ryu, Hyun S Yang
  International Conference on Entertainment Computing (ICEC 2012)                                  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 (VRCAI 2011)                                                                           2011

*Mobile Augmented Reality using scalable recognition and tracking*
Jaewon Ha, **Jinki Jung**, ByungOk Han, Kyusung Cho, Hyun Seung Yang
  Virtual Reality Conference (VR 2011), IEEE                                                       2011

*Online scene modeling for interactive AR applications*
Jaesang Yoo, Kyusung Cho, **Jinki Jung**, Hyun S Yang
  International Conference on Entertainment Computing (ICEC 2010)                                  2010

*Multiple page recognition and tracking for augmented books*
Kyusung Cho, Jaesang Yoo, **Jinki Jung**, Hyun S Yang
  International Conference on Entertainment Computing (ICEC 2010)                                  2010

*Real-time robust body part tracking for augmented reality interface*
**Jinki Jung**, Kyusung Cho, Hyun S Yang
  ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in
  Industry (VRCAI 2009)                                                                           2009

*Hybrid visual tracking for augmented books*
Hyun S Yang, Kyusung Cho, Jaemin Soh, **Jinki Jung**, Junseok Lee
  International Conference on Entertainment Computing (ICEC 2009)                                  2009

## PATENTS

*A virtual keyboard based on hand recognition and implementing method thereof*
Korea Patent, 10-1559424, Co-inventor                                                             2015

*3D interaction method for Augmented Reality using multi-touch interface*
Korea Patent, 10-1338958, Co-inventor                                                             2013

*Augmented reality system and method of a printed matter and video*
Korea Patent, 10-1197126, Co-inventor                                                             2012

*Efficient 3D object recognition using a tree structure*
Korea Patent, 10-1068465, Co-inventor                                                             2011

*3D OBJECT RECOGNITION SYSTEM AND METHOD*
US Patent Pending, 12/912,211, Co-inventor                                                        2010

## RESEARCH EXPERIENCES

Virtuality for Safety
**Lead researcher**                                                                      **March 2018 – Now**
Conducted researches on technology-driven safety ensuring components based on VR/AR

VR-simulated Sailor Training Platform for Emergency
**Project manager, Researcher**                                               **June 2015 – February 2019**
Developed a sailor training platform for emergency based on VR system that provides natural interaction
  with virtual ship environment.

KAIST-KUSTAR international joint research of indoor localization and context-aware Augmented Reality
**Project manager, Researcher**     **March 2013 – June 2015**
Designed real-time indoor localization using indoor scene analysis that makes use of line feature and multiple sensors of a mobile device.

Augmented Keyboard: a virtual keyboard interface for smart glasses
**Project manager, Researcher**     **April 2014 – December 2014**
Proposed a novel interaction design and developed a model-based hand palm tracking method for the proposed interface.

Performance optimization of markerless tracking module for mobile devices
**Project manager, System engineer**     **March 2014 – December 2014**
Doubled the tracking performance (FPS) on a mobile device by adapting multi-threaded architecture.

Probabilistic modeling of line-pair appearance for drawing image retrieval
**Project manager, Researcher**     **September 2012 – March 2013**
Proposed a novel histogram based matching method that employs the invariant properties of the pairwise line features.

Real-time 6DOF hand pose estimation for Augmented Reality using RGB camera
**Researcher**     **December 2010 – June 2011**
Developed the appearance based hand pose estimation by modeling spatial structure of skin colored region.

Real-time robust markerless recognition and tracking for Augmented Reality book
**Researcher**     **March 2008 – January 2011**
Developed the robust recognition performance against cluttered background by dividing the screen into multiple areas and separating the corresponding recognition results

Real-time body part tracking and gesture recognition for an intelligent environment
**Project manager, Researcher**     **August 2008 – September 2009**
Proposed the RGB-image based 3D body part tracking method by using Kalman filter.

PhotoGeo: 3D reconstruction of vehicles based on image based rendering modeling (IBMR)
**System engineer**     **March 2007 – November 2007**
Implemented the texturing module and GUI interface of the system.

## TEACHING EXPERIENCE

Korea Advanced Institute of Science and Technology (KAIST)
**Teaching Assistant – Computer Science 101 (Introduction to programming)**     **2009 Fall - 2014 Fall**
Developed lab materials, midterm/final exams, and overall web-based course administration

## AWARDS

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|---|---|
| Outstanding Teaching Assistant Award | 2009 fall semester |
| Outstanding Teaching Assistant Award | 2010 spring semester |
| Outstanding Teaching Assistant Award | 2010 fall semester |
| Outstanding Teaching Assistant Award | 2012 fall semester |
| Outstanding Teaching Assistant Award | 2013 fall semester |

## LEADERSHIP SKILLS

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|---|---|
| Representative of M.S. in CS department, KAIST | 2008 |
| Representative student of AIM Lab. | 2012-2014 |

## LANGUAGES

English – speak fluently and read/write with high proficiency (lectured in English)
Korean – native language