JINKI JUNG

Email : your.jinki.jung@gmail.com / (secondary) jinki@dmc.international
Office: Bülowsvej 40, stuen Frederiksberg, Denmark
Personal webpage : https://jinkijung.github.io/
Citations : http://scholar.google.co.kr/citations?user=inzigzUAAAAJ&hl=en&authuser=1

HIGHLIGHT

Jinki Jung is a senior software developer of Digital Maritime Consultancy, contributing mostly technical aspects of Maritime Connectivity Platform (MCP), one of the biggest open-source platform in maritime industry, as a system architect, a full-stack developer and a cyber-security expert. Previously he was a researcher with Augmented Reality/Virtual Reality/Human-Computer interaction background leading international and happy collaborations for safety-critical issues in pragmatic uses of those technologies. His personal interest for the time of writing is modeling a task for collaborations of human and intelligent machine in his very small but interesting project, Tasc.

EDUCATION

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

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

Soongsil University
B.S., Media Engineering 2007   **2003-2007**

CAREER

Digital Maritime Consultancy, Denmark
Senior Software Developer, Secretariat of MCP
Research Topic: Massive Ship Traffic Simulation   **2019-**

Korea Research Institute of Ships and Ocean Engineering (KRISO), Republic of Korea
Postdoctoral researcher, Maritime Safety Research Division
Research Topic: Virtual Reality for Maritime Safety Training
            Context Awareness for Maritime Safety   **2016-2019**

Korea Advanced Institute of Science and Technology (KAIST) , Republic of Korea
Postdoctoral researcher, Information and Electronics Research Institute
Research Topic: Egocentric Hand Interaction using Depth Camera
            Virtual Reality for Maritime Safety Training   **2015-2016**

TECHNICAL SKILLS

Programming Language: C, C++, Java, Objective C, Python, Typescript, Javascript
Mobile Programming: iOS, Android
Front-end: React, Angular,
Back-end: Spring boot, Node.js, NestJS
Graphics Engine: Unity3D, UE4, OpenGL

PROJECTS

Maritime Connectivity Platform (MCP) - https://maritimeconnectivity.net
Senior SW developer / General, IDSec, MSR and MMS WG member   **March 2018 – Now**
Contributing implementation of MCP core components including MIR (PKI, digital certificate, OIDC, HSM
    and MIR specification/installation/documentation), MSR (Distributed ledger, Blockchain, Spring boot
    application backend and React-based web front-end) and MMS (high-level description)

Maritime Object AI Data - https://aihub.or.kr/aidata/34155
Annotation tool & DL developer (https://github.com/Digital-Maritime-Consultancy/VoTT/tree/0.7)   **Sept. 2020 – Dec. 2020**
Developing an annotation tool for Korean national project establishing a maritime object image database
    and a panoptic segmentation model for validating the database

Task script (Tasc) - https://tasc.readthedocs.io/en/latest/
Lead researcher   **March 2018 – Now**
Establishing Task, which is a task script describing a sequence of tasks through building-block approach
    and developing a working demo of the idea

PUBLICATIONS

International Journals

Discipline vs guidance: comparison of visual engagement approaches in immersive virtual environments
Hyeopwoo Lee, **Jinki Jung**, Heung Kyu Lee, Hyun Seung Yang
    Multimedia tools and applications   2021

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 EXPERIENCES

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

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

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
Korean – native language