Changbeom Choi *1982.10.30*

✉ cbchoi@handong.edu • 🕾 +82-10-2735-5723 • 🖥 http://pro.handong.edu/cbchoi/
(305-761) Expo Apt. 405-403, 448 Expo-ro, Yu-sung gu • Daejeon • South Korea

Education

Kyunghee University — Suwon, South Korea
Major: Computer Engineering — *2001 – 2005*

- B.S. degree, February 2005; GPA 4.19/4.3
- Concentration: Computer Programming
- Relevant Courses: Object-Oriented Programming; Windows Programming; Internet Programming

Korea Advanced Institute of Science and Technology — Daejeon, South Korea
Major: Computer Science — *2005 – 2007*

- M.S. degree, February 2007; GPA 3.75/4.3
- Concentration: Algorithms; Graph Theory
- Relevant Courses: Algorithm Design and Analysis; Graph Theory; Entrepreneurship and Business Strategies

Korea Advanced Institute of Science and Technology — Daejeon, South Korea
Major: Electrical Engineering — *2007 – 2014*

- Candidate for Doctor of Philosophy degree, August 2014; GPA 3.65/4.3
- Concentration: Modeling & Simulation; Software Engineering
- Relevant Courses: Discrete Event System Modeling & Simulation

Work Experience

School of Creative Convergence Study — HGU, Pohang, South Korea
Assistant Professor — *2016.09 – Current*

- Deputy Director of Program for Industrial needs - Matched Education (PRIME) Project (2018.02 – Current)
- Director of Faculty and Student Support, Program for Industrial needs - Matched Education (PRIME) Project (2016.08 – 2018.02)

School of Creative Convergence Study — Pohang, South Korea
Assistant Professor — *2014.09 – 2016.08*

- 66th UN NGO DPI Conference Youth Comittee member (2016.05.30 – 2016.06.01)

Dept. of Computer Science — Daejoen, KAIST, South Korea
Researcher — *2007.03 – 2007.08*

- Categorized the security vulnerablities for mobile applications before the smart phones are popularized
- Introduced the Run-time Verification technology to monitor and assess the vulnerability of mobile applications in run-time

Project Experience

Mobile Code Vulnerability Analysis and Assessment based on Real-time Verification
Researcher (Position: Hands on Worker) — *2007.02 – 2007.12*

- This project was supported and cooperated by Cyber Technology Research Foundation
- Categorized security vulnerabilities of PDA and smart-phone caused by mobile application (cooperated with security specialist)
- Developed vulnerability report system based on the Run-time Verification

Research of Many to Many Combat Simulation System Construction
Position: Researcher (Role: Hands on Worker) — *2007.09 – 2009.12*

- Developed verification framework of command and control system for next generation cruiser with researchers of the Agency for Defense Development and development team of the Samsung Thales
- Developed standalone simulation and interoperation simulation features to assist the researchers of the agency

Development of Virtual World Framework Technology: User Created, Evolutionary, Realistic Simulation

Researcher (Position: Chief Technical Officer at the consortium) *2009.06 – 2013.02*
- Cooperated with the researcher of Samsung, SBS Contents Hub, and other venture company
- Developed intelligent virtual agent framework to assist the developer to build a services easily
- Analyzed the technologies of the consortium members and establish an integration plan

Software Formal Verification Method using Aspect Oriented Programing Technique

Chief of Research *2009.01 – 2009.12*
- Selected by High Risk High Return Program of KAIST; Became a Chief of Research as a Ph.D student
- Proposed a verfication methodology based on the aspect oriented programming to solve the verification problem of software

Research of Simulation Construction Technique for Effective Analysis of Submarine Battle System

Researcher (Position: Chief of Technical Officer) *2010.01 – 2012.12*
- Developed a model templates of the naval warfare system based on the Discrete Event System Formalism
- Developed wargame simulator based on the template of the naval warfare model

Research of Interoperation between Engineering Model and Engagement Model

Position: Researcher (Role:Technical Advisor) *2011.02 – 2013.12*
- Developed experimental environment for interoperation systems
- Developed interoperation system of the engineering model and engagement models

Development of Damage Assessment Model of Korea Combat Training Center(KCTC)

Position: Researcher (Role: Hands on Worker) *2012.04 – 2012.09*
- Analyzed the existing damage assessment model of KCTC
- Proposed various damage assessment models based on the research
- Opinion coordination among military officers, researchers of Defense Acquisition Program Administration, and developement consortium

Development of Modeling and Simulation Framework of Hadoop System

Position: Researcher (Role:Technical Advisor) *2012.04 – 2012.09*
- Proposed User Interface(UI) system of the Hadoop Simulation Framework to assist the stakeholder
- Developed the UI system using C#

Research on the Interoperation System between ExtendSim and Matlab/Simulink

Position: Chief of Research (Role: Generalize Development) *2014.09 – 2015.02*
- Proposed Standard Data Interoperation Formats for ExtendSim and Matlab/Simulink
- Developed the prototype of the interoperation system using C++

Development of simulation environment for interoperation between Pyro simulation model using ExtendSim and Matlab simulation model

Position: Chief of Research (Role: Generalize Development) *2015.03 – 2016.02*
- Proposed Standard Data Interoperation System for ExtendSim and Matlab/Simulink
- Developed the interoperation system using C++

Modleing and simulation environment for safeguard module interoperation of Pyro facility

Position: Chief of Research (Role: Generalize Development) *2016.03 – 2017.02*
- Proposing interoperation architecture between pyro simulation model and safeguard simulation model
- Developing interoperation system of the pyro simulation and safeguard simulation

---

Publications

International Journal

- Jeong Hoon Kim, Chang Beom Choi, and Tag Gon Kim, "Battle Experiments of Naval Air Defense with Discrete Event System-based Mission-level Modeling and Simulations," The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology, Vol. 8, No. 3, pp. 173 – 187, July., 2011.

- Tag Gon Kim, Chang Ho Sung, Su-Youn Hong, Jeong Hee Hong, Chang Beom Choi, Jeong Hoon Kim, Kyung Min Seo, and Jang Won Bae, "DEVSim++ Toolset for Defense Modeling and Simulation and Interoperation," The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology, Vol. 8, No. 3, pp. 129 – 142, July., 2011.

- Chang Beom Choi, Kyung-Min Seo, Tag Gon Kim, "DEXSim: an experimental environment for distributed execution of replicated simulators using a concept of single simulation multiple scenarios," SIMULATION: Transaction of The Society for Modeling and Simulation International, vol. 90, no. 4, pp. 355–376, 2014

- Kyung-Min Seo, Chang Beom Choi, Tag Gon Kim, and Jung Hoon Kim, "DEVS-based combat modeling for engagement-level defense simulation," SIMULATION: Transaction of The Society for Modeling and Simulation International, vol. 90, no. 7, 759–781, 2014.

- Minwook Yu, Chang Beom Choi, and Tag Gon Kim, "High-Level Architecture Service Management for the Interoperation of Federations," SIMULATION: Transaction of The Society for Modeling and Simulation International, vol.91, no. 6, pp. 566–590, 2015.

- Chang Beom Choi, Moon Gi Seok, Seon Han Choi, Tag Gon Kim, Soohan Kim, "Military serious game federation development and execution process based on interoperation between game application and constructive simulators," International Journal of Simulation and Modeling, vol. 10, no. 2, pp. 103–116, 2015.

- I.-J. Kim, C. Choi, and S.-H. Lee, "Improving discrimination ability of convolutional neural networks by hybrid learning," International Journal on Document Analysis and Recognition (IJDAR), vol. 19, no. 1, pp. 1–9, 2015.

- M. G. Seok, T. G. Kim, C. B. Choi, D. Park, "A Scalable Modeling and Simulation Environment for Chemical Gas Emergencies," Computing in Science and Engineering, vol. 18, no. 4, pp. 25–33, 2016

- M. G. Seok, T. G. Kim, C. B. Choi, D. Park, "An HLA-Based Distributed Cosimulation Framework in Mixed-Signal System-on-Chip Design," IEEE Trans. VLSI Syst., vol. 25, no. 2, pp. 760–764, 2017

International Conference

- Jong Hyuk Byun, Chang Beom Choi and Tag Gon Kim, "Verification of the DEVS Model Implementation using Aspect Embedded DEVS," in Proceedings of 2009 Spring Simulation MultiConf., San Diego, CA, USA, Mar., 2009

- JeongHoon. Kim, Chang Beom Choi, IlChul Moon, and TagGon Kim, "DEVS based Validation of Warship Anti-Air Defense Doctrin," in Proceedings of 2010 Spring Simulation MultiConf.

- Chang Beom Choi, JangWon Bae and Tag Gon Kim, "Challenges of Teaching Modeling and Simulation Theory to the Domain Experts in a Blended Learning Environment," in Proceedings of International Conference on Information Technology Based Higher Education and Training, Urgup, Turkey, Apr., 2010.

- Chang Beom Choi, Jangwon Bae, Minwook Yoo, Tag Gon Kim, and Soohan Kim, "Verification of Combat System using Discrete Event System Specification Formalism," in Proceedings of DHSS 2011, Italy, Sept., 2011

- Kyung-Min Seo, Chang Beom Choi, Jung Hoon Kim, and Tag Gon Kim, "Interface Forms for an Underwater Warfare Simulation Environment," in Proceedings of DHSS 2011, Italy, Sept., 2011

- Chang Beom Choi, Se Jung Kwon, Tag Gon Kim, Jae Hyun Lim, Dong-Hyun Baek, and Soohan Kim, "Extendable Simulation Framework for Virtual World Environment based on the DEVS Formalism," in Proceedings of AsiaSim 2011, Korea, Nov., 2011.

- Byeong Soo Kim, Chang Beom Choi, and Tag Gon Kim, "Multifaceted Modeling and Simulation Framework for System of Systems Using HLA/RTI," in Proceedings of 2013 Spring Simulation Multiconference, 16th Communications and Networking Symposium (CNS), San Diego, CA, USA, April, 2013.

- Chang Beom Choi, Moon-Gi Seok, Seon Han Choi, Tag Gon Kim, and Soohan Kim "Serious game development methodology by via interoperation between a constructive simulator and a game application using HLA/RTI," in Proceedings of the 10th International Multidisciplinary Modeling & Simulation Multiconference 2013, Athena, Greece, Sep., 2013.

- Min Wook Yoo, Chang Beom Choi and Tag Gon Kim "Time Management In Hierarchical Federation Using RTI-RTI Interoperation," in Proceedings of 2013 Winter Simulation Multiconference, Washington D.C., USA, Dec., 2013.

- BitNal Kim, OnYu Kang, Seonwha Baek, Yonghyun Shim,Changbeom Choi "Agent-Based Simulation for Taxi and Customer Matching," in Proceedings of 2015 Asia Simualtion Conference, Jeju, Korea, Nov., 2015.

- Yun Jong Kim, Ji Yong Yang,Joong sup Lee, and Changbeom Choi "DEVS based simulation environment for Mobile Application," in Proceedings of 2015 Asia Simualtion Conference, Jeju, Korea, Nov., 2015.

- Inho Jung, Jaewoong Choi, In-Jung Kim, and Changbeom Choi "Interactive learning environment for practical programming language based on web service.," in Proceedings of ITHET 2016, pp. 1–7, 2016.

- Inho Jung, Joongsup Lee, Jaehyo Kim, and Changbeom Choi "Ubiquitous gamification framework for stroke rehabilitation treatment based on the web service," in Proceedings of REHAB 2016, pp. 117–120, 2016.

Honors, Awards, and Patent

Honors

- Graduate summa cum laude from Kyunghee University

Awards

- The university president awards in Kyunghee University (2002.09, 2005.02)
- The First International Bernard P. Zeigler DEVS Modeling and Simulation Award, Track II: Commercial DEVS application, First Prize. 2011
- Best Paper Awards of the International Defense and Homeland Security Simulation Workshop (the 10th International Multidisciplinary Modeling & Simulation Multiconference 2013)

Patent

- Hierarchical Management Method of DEVS Based Simulation Model, Patent Number: 10-1362383, 2014.02.06
- Distributed DEVS Simulation Architecture for Mobile Devices, 10-1358075, 2014.01
- Experimental Frame for efficient simulation data collection, and simulation method and system using it, 10-1158637, 2012.06
- Hierarchical Intelligent Virtual Agent Framework based on plug-in, 10-1153316, 2014.05

Skills and Other Information

Skills

- Microsoft Office literacy
- C/C++, C#, Java, XML, HTML, PHP, AVR Programming, Swift, LaTeX literacy

Languages

- Working knowledge of English

Other Information

- Completed Military Service as an exception and finished military duties at KAIST