

Han Joo Chae

Chief AI Officer @ ROKIT Healthcare

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SUMMARY

User-oriented pragmatist seeking to solve real-world problems using CV/ML and HCI techniques. A wide range of experience from startup to tech giant including team building, rapid-prototyping, ML product launch and operation, user research, and paper/patent publications.

EXPERIENCE

ROKIT Healthcare, Seoul, Korea — CAIO & Vice President

OCTOBER 2020 - PRESENT

Established an AI department to innovate regenerative medicine utilizing CV/ML techniques. Secured 10-year contracts worth about KRW 2.5 trillion by quickly delivering MVPs to customers. Continuously publishing patents and papers to top-tier venues to build up credibility and accelerate the go-to-market pace.

Samsung Electronics, Suwon, Korea — UX Researcher

AUGUST 2010 - DECEMBER 2013

Designed new interfaces on mobile, tablet, TV, and Smartwatch and developed prototypes as a proof-of-concept. Also, developed NMS web applications for Mobile WiMAX, LTE, and WCDMA base stations.

Bluegg (startup), Seoul, Korea — Software Developer

OCTOBER 2014 - DECEMBER 2015

Developed Android and web applications for a donation campaign service.

Samsung R&D Center Silicon Valley, San Jose, CA — Intern

JUNE 2009 - AUGUST 2009

Developed a mobile 3D interface using sensors and image processing.

EDUCATION

Seoul National University, Seoul, Korea — Ph.D.

AUGUST 2015 - FEBRUARY 2020

Ph.D. in Computer Science and Engineering.

Carnegie Mellon University, Pittsburgh, PA — M.S. & B.S.

AUGUST 2005 - MAY 2010

M.S. in Electrical and Computer Engineering.

B.S. in Electrical and Computer Engineering with University Honors.

RESEARCH INTERESTS

Human-computer Interaction

Machine Learning

Augmented Reality

Healthcare & Medical
Application

3D Interaction Technique

Information Visualization

AWARDS & HONORS

Naver Ph.D. Fellowship, 2018.

Awarded for outstanding research achievement in computer science.

3rd Place Winner, 2018.

Participated & won 3rd place in the BR41N.IO

Brain-Computer Interface Designers Hackathon at the 2018 UIST School.

Google Travel Grants, 2016.

Awarded to attend UIST '16 and present a poster.

Samsung Best Paper Award, 2009.

Awarded for the paper about the mobile 3D interface developed at Samsung R&D Center during the internship.

University Honors, 2009.

Received from CMU in recognition of exemplary academic achievement.

Eta Kappa Nu, 2009. Member of the ECE Honor Society.

PAPERS

Han Joo Chae, Seunghwan Lee, Hyewon Son, Seungyeob Han, Taebin Lim. 2022. Generating 3D Bio-Printable Patches Using Wound Segmentation and Reconstruction to Treat Diabetic Foot Ulcers. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR '22)*.

Han Joo Chae, Youli Chang, Minji Kim, Gwanmo Park, and Jinwook Seo. 2020. ARphy: Managing Photo Collections Using Physical Objects in AR. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20)*.

Han Joo Chae, Youli Chang, Minji Kim, Gwanmo Park, and Jinwook Seo. 2020. Leveraging the Physical Properties of Real Objects to Manage Digital Photography in Augmented Reality. In the *Journal of Korean Institute of Information Scientists and Engineers (JOK '20)*.

Han Joo Chae, Jeong-in Hwang, Yieun Kim, Kyle Koh, and Jinwook Seo. 2020. SCARII : A Study to Advise Safety Concerns Caused by Involuntary Inputs in Augmented Reality. In the *Journal of Korean Institute of Next Generation Computing*.

Sarah Faltaous, Gabriel Haas, Liliana Barrios, Andreas Seiderer, Sebastian Felix Rauh, Han Joo Chae, Stefan Schneegass, and Florian Alt. 2019. BrainShare: A Glimpse of Social Interaction for Locked-in Syndrome Patients. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19)*.

Han Joo Chae, Jeong-in Hwang, and Jinwook Seo. 2018. Wall-based Space Manipulation Technique for Efficient Placement of Distant Objects in Augmented Reality. In *Proceedings of the 31st Annual ACM Symposium on User Interface Software and Technology (UIST '18)*.

Han Joo Chae, Jeong-in Hwang, Yuri Choi, Yieun Kim, Kyle Koh, and Jinwook Seo. 2016. Prevention of Unintentional Input While Using Wrist Rotation for Device Configuration. In *Proceedings of the 29th Annual Symposium on User Interface Software and Technology (UIST '16 Adjunct)*.

Heonjin Park, Kyle Koh, Yuri Choi, Han Joo Chae, Jeongin Hwang, and Jinwook Seo. 2016. Defining Rules Among Devices in Smart Environment Using an Augmented Reality Headset. In *Proceedings of the Second International Conference on IoT in Urban Space (Urb-IoT '16)*.

Han Joo Chae, Jeong-in Hwang, Yieun Kim, Kyle Koh, and Jinwook Seo. 2018. A Study to Advise Involuntary Inputs While Configuring IoT Devices in Augmented Reality Environment. In *Proceedings of the Korea Computer Congress 2018 (KCC 2018)*.

[Best Note]

Kyle Koh, Han Joo Chae, Yuri Choi, Yieun Kim, and Jinwook Seo. 2016. A Study on User Interface for Device Configuration with Wrist Rotation Using AR and Wearables in IoT Environment. In *Proceedings of the Korea Computer Congress 2018 (KCC 2016)*.

Yieun Kim, Koeun Choi, Han Joo Chae, and Jinwook Seo. 2018. CookUs: Improving User Interaction with multiple recipes to cook cousins. In *Proceedings of the Korea Computer Congress 2018 (KCC 2018)*.

Youli Chang, Brian J. Lee, GuHyun Han, Hyunjoo Song, Jaemin Jo, Han Joo Chae, and Jinwook Seo. 2016. A Usability Testing Method Using EEG, EDA, BVP Biosignals. In *Proceedings of the Korea Computer Congress 2016 (KCC 2016)*.

PATENTS

KR102378894B1 (2022) - Automatic wound boundary detecting method using artificial intelligence and 3d model generating method for wound.

KR102392372B1 (2022) - A method of unfolding the affected area in the form of a 3d curved surface through low-pass filter using artificial intelligence.

KR102392371B1 (2022) - A method of unfolding the affected area in the form of a 3d curved surface through polynomial regression analysis using artificial intelligence.

US11057866B2 (2021) - Method and apparatus for providing notification.

US10924147B2 (2021) - Wearable device for transmitting a message comprising strings associated with a state of a user.

US10852841B2 (2020) - Method of performing function of device and device for performing the method.

US10748409B2 (2020) - Method of providing activity notification and device thereof.

US10674193B2 (2020) - Content providing method and device.

US10638452B2 (2020) - Method and apparatus for providing notification.

US10638451B2 (2020) - Method and apparatus for providing notification.

AU2016235039B2 (2017) - Method of performing function of device and device for performing the method.

US9629120B2 (2017) - Method and apparatus for providing notification.

US9338620B2 (2016) - Method and apparatus for executing alarm with respect to missed received call for mobile communication terminal.

US8310537B2 (2012) - Detecting ego-motion on a mobile device displaying three-dimensional content.

INVITED TALKS

Samsung Software Developer Conference (SSDC), November 2022

Sungkyunkwan University Sustainable IT Technology Seminar, November 2022

KAIST GSTC Colloquium, September 2022

Soongsil University Technical Information Seminar, September 2022

AWS Public Sector AI/ML Cloud Alliance (Asia Pacific & Japan), August 2022

Naver Techtalk, March 2022

Korea Institute of Machinery and Materials (KIMM) AI Seminar, January 2022

ROKIT Open Innovation - Trends in AI Technology and Its Medical Applications, June 2021

ROKIT Open Innovation - Emerging A.I. Technologies In Personalized Medicine, May 2021

TEACHING

AI-based Bioprinting Technology and Use Cases in the Medical Field, Daegu Health College — 2021, 2022

AI Technology in Healthcare and Medical Industry, Handong Global University — 2021

Scenario-Based UX Design, Seoul National University — 2018

Chatbot Development Workshop, Seoul National University — 2018

Simple User Experiment with Quantitative Usability Testing, Seoul National University — 2018

