

# Han Joo Chae

Chief AI Officer @ ROKIT Healthcare

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## SUMMARY

Tech-oriented executive with experience from startup to tech giant including initial team building, rapid-prototyping, product launch, UX research, enterprise-level operation, and IR pitching and fundraising.

## 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

Biomedical 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 (scheduled)

KAIST GSTC Colloquium, September 2022 (scheduled)

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

**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

**Electronics Prototyping Using Arduino**, Seoul National University — 2017