

## Kim, Jihwan

Seoul, South Korea

Phone: +82-10-9332-4763

Email: [jihwan21.kim@gmail.com](mailto:jihwan21.kim@gmail.com)

### EDUCATION

03. 2009 – 01. 2015 **Sogang University, Seoul, South Korea**

Bachelor of Science in Computer Science and Engineering

### WORK EXPERIENCE

06. 2019 – Present **Samsung Electronics Co., Ltd, MX Business, Suwon, South Korea**

*SW Engineer, Wallet R&D Group*

#### 1. Blockchain Keystore Project Development

- Built a trusted application in TrustZone to store a private key for blockchain coins and sign each supported coin (BCT, ETH, TRX, etc.)
  - Developed ECDSA, EDDSA algorithms and BIP32, BIP44 in TrustZone
- Developed a trusted UI in TrustZone to show mnemonic and transaction UI
- Developed DID API using Hyperledger Indy in TrustZone to engage third-party applications such as driver license apps
  - Developed ZKP algorithm in TrustZone level

#### 2. Digital Car Key Project Development

- Instituted secure communication between car and phone based on Car Connectivity Consortium (CCC) Specification in TrustZone
  - Developed an Android framework application to communicate between normal OS and secure OS using Android Studio Tool
  - Responsible for developing crypto algorithms in C, Cpp language in TrustZone and embedded Secure Element (eSE)
- As a member of the Car Connectivity Consortium (CCC), responsible for modifying specification documents to establish standard specifications
- Currently providing the commercialized Digitalkey application to BMW, KIA, and Genesis, and plan to cooperate with various automakers such as Volkswagen and Volvo

01. 2015 – 05. 2019 **Samsung Electronics Co., Ltd, MX Business, Suwon, South Korea**

*SW Engineer, Health R&D Group*

Headed the coding and development of software for a mobile application for Galaxy smartphones renewed every year

#### 1. Android Kernel Sensor Driver Development

- Ported IR-RED LED sensor driver in Android kernel when the sensor chipset or mobile was renewed
- Implemented algorithm to obtain highly accurate bio-signals by adjusting HW sensor performance according to skin tone or skin adhesion

## 2. Heart rate, SpO2, Stress Algorithm Development

- Designed and developed signal processing algorithm using MATLAB and Visual Studio Tool to get heart rate, SpO2, and stress level (for mobile and smartwatch)
- Developed lightweight heart algorithm to fit in low-memory products such as Galaxy Fit
- Related Patent: US201815937668, US201916964087

## RESEARCH EXPERIENCE

07. 2013 – 06. 2014

### Samsung Electronics Software Membership Program, Seoul, South Korea

- Initiated a tank game using an actual mini tank and mobile controller (08-10. 2013)
  - Installed Arduino HW in a mini tank and developed an Android application to control the tank with a mobile controller
  - Attached a camera to the tank so that users can see the real-time movement on a mobile controller screen
- Developed a cross-platform online RPG game (01-03. 2014)
  - Developed a mutual online RPG game on both mobile and window side using Unity 3D.
  - Managed client platform to guarantee real-time communication between mobile and window using an IOCP server
- Developed a multimedia note app in Galaxy Note (06-09. 2014)
  - Developed a note app that allows users to take notes while watching a video lecture
  - Implemented the app to automatically record the time zone to take notes and play the video part of each time zone stored in each word
  - Managed SPen SDK and time sync between video and write time using Android Eclipse Tool

## PATENT

### [1] Electronic device having partial ledger in blockchain network and operation method thereof

Number: WO2022260501A1 / Date: 2022.12.15

### [2] Electronic device and method for measuring biometric information

Number: US2018276448A1 / Date: 2018.09.27

Number: EP3381369A1 / Date: 2018.10.03

Number: CN108652594A / Date: 2018.10.06

Number: KR20180109328A / Date: 2018.10.08

### [3] Electronic Device for Acquiring Biometrics Using PPG Sensor, and Method Therefor

Number: US2021030290A1 / Date: 2021.02.04

Number: EP3721795A1 / Date: 2020.10.14

**[4] PPG The Electronic Device and The Method for Obtaining Bio Information by Using A PPG Sensor**

Number: KR20180013842 / Date: 2018.02.05

**[5] ELECTRONIC DEVICE FOR MANAGING PASSWORD AND OPERATING METHOD THEREOF**

Number: WO2022197059A1 / Date: 2022.09.22

Number: KR20220129333A / Date: 2022.09.23

**AWARDS, SCHOLARSHIPS AND HONORS**

06. 2022	Excellent Publication Award / Korea Society of Blockchain
09. 2016	Expert Programmer / Algorithm Certificate from Samsung Electronics
11. 2013	2nd prize/ ACM programming contest / Sogang university
11. 2012	2nd prize/ ACM programming contest / Sogang university

**VOLUNTARY/ EXTRACURRICULAR ACTIVITIES**

03. 1997 – 12. 1997	Eulji Elementary School, Seoul, South Korea
12. 1997 – 06. 2008	New yuying International School, Qingdao, China

**CERTIFICATES & SKILLS**

<b>Language</b>	English OPIC: IH(Intermediate High) Chinese: Advanced (Mandarin)
<b>Others</b>	Expert Programmer (Algorithm Certificate from Samsung Electronics) C, C++, C#, Java, Kotlin, Python Driver's License 1st Class(Ordinary)