

# SEONKWON KIM

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## Application for admission

*Bachelor of Science in Engineering (Computer Science / Electronics Engineering)*  
*Master of Science (Cyber Security: Software Security)*

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## TECHNICAL SKILLS

**Programming Languages:** Intermediate: C, Java, C++, Python, Dart, Go

**Computer Skills:** Intermediate: Microsoft office, Arduino, FPGA, Web framework Spring, Java EE8, Flutter, Android, Web framework Django

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## PROJECT EXPERIENCE

- **Product Design Project: A bus application using voice recognition technology for blind people**  
(Handong Global University, July 2017 – Sept. 2017)
  - Part of a 3-member team with a professor advisor, to develop a product to address the needs of Pohang city residents who are blind.
  - Utilized Android by Java and researched GPI technology and Open API as a programmer.
- **Business Design Project for an IT Start-up in China**  
(University of International Business and Economics; Beijing, China, July 2017 – Aug. 2017)
  - Team Lead for a 5-member team who developed a business project for an IT start-up business in China.
  - Won 1<sup>st</sup> Place in the contest hosted by Cheil Pengtai Corporation.
  - Utilized Oven, an online prototyping tool.
- **Arduino Design Project: A device to show on a screen display about seats in a library**  
(Handong Global University, Aug. 2017 – Dec. 2017)
  - Used Arduino by Sketch with PIR sensors and servomotors to detect whether people sit in a library chair or not.
- **FPGA Design Project: A shooting game with I/O devices**  
(Handong Global University, Aug. 2018 – Dec. 2018)
  - Used Nexys DDR 4 board by Verilog with a computer monitor, a speaker and a PS2 Keyboard to play the game.
- **Industry and Academy Capstone Design Project: A enterprise web solution**  
(Handong Global University, Feb. 2019 – Dec. 2019)
  - Team Lead for a 2-member team with a professor advisor and a company president, to develop a web-based international track and field tournament system.
  - Utilized Java EE 8 and responded to multi-view and internationalization dynamically.
- **Industry and Academy Research Cooperation Project: A dynamic web solution based on GUI**  
(Handong Global University, Feb. 2019 – Dec. 2019)
  - Team Lead for a 2-member team with a professor advisor and a company president, to develop a dynamic web solution system based on GUI.
- **A Grocery Purchasing System Using RFID Technology for Blind People**  
(Handong Global University, Jan. 2020 – Jun. 2020)
  - Team Lead for a 3-member team with a professor advisor, to research human-computer interaction.
  - Utilized Flutter, RFID technology, and UI/UX for developing a mobile application.

- **KU-Smart Mask Project**  
(Graduate School of Korea University, Mar. 2021 – Aug. 2021)
  - Team Lead for a 3-member team in the development of healthcare masks designed to measure the content of bad breath.
  - Won 4<sup>th</sup> Place in the contest hosted by Korea University Tech Fair for 2022
- **Development of Technology for the Security and Ultra-high-speed Integrity of the Next-generation Internal Network of Autonomous Vehicles**  
(Graduate School of Korea University, Mar. 2021 – Dec. 2022)
  - researched AI-based autonomous vehicles internal network security threat prediction and analysis technology.
- **Development of Security Service Technology Using Side-channel Information**  
(Graduate School of Korea University, Mar. 2021 – Jan. 2023)
  - designed of a side-channel information measurement environment collected by PC systems.
- **Development of Source Code Obfuscation and Decryption Technology**  
(Graduate School of Korea University, Aug. 2021 – Feb. 2023)
  - developed a novel source code obfuscation technique.

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## WORK EXPERIENCE

- **Application Developer, Peoplespace Global Internship**  
(Irvine, CA, Dec. 2017 – Feb. 2018)
  - Worked 45 hours per week, building a standalone web app to analyze eye-tracking data by OpenCV and Image processing.
- **Web Developer, Doreiku Co. Internship**  
(Osaka, Japan, Dec. 2018 – Jan. 2019)
  - Worked 45 hours per week, developing an enterprise web solution with Spring web framework.
- **Researcher, KAIST SE LAB Internship**  
(Daejeon, Korea, Jun. 2019 – Aug. 2019)
  - Worked 45 hours per week, researching System of Systems goal modeling and developing the simulation program for interactive functions.
- **Application Developer, Physiocue, Inc.**  
(San Jose, CA, Dec. 2019 – Feb. 2020)
  - Worked 45 hours per week, developing a mobile application to check users' migraine information and suggest health advice for users.
- **Researcher, KAIST CPS LAB Internship**  
(Daejeon, Korea, July. 2020 – Sept. 2020)
  - Worked 45 hours per week, researching web system security and authentication for industrial robots.
- **Researcher, DUDU IT, Inc.**  
(Seoul, Korea, Dec. 2020 – Feb. 2021)
  - Worked 45 hours per week, researching cyber security contents related to CTF and Smart Home IoT Security Living Lab with Korea Internet & Security Agency (KISA).
- **Teaching Assistant, Korea University Institute of Data Science**  
(Seoul, Korea, Sep. 2021 – Feb. 2023)
  - Worked 65 hours per month, assisting professors and supporting the enhancement of the learning experience for graduate school students.
  - Participated in courses such as Principles and Applications of Deep Learning, Data Science and Artificial Intelligence Programming, and Principles and Applications of Machine Learning.

- **Resident Assistant, Korea University Anam Dormitory**  
(Seoul, Korea, Apr. 2021 – Feb. 2022)
    - Worked 45 hours, fostering an inclusive living environment, and helping enforce residence hall policies.
  - **Camp Instructor, Korea University Center for Gifted Education**  
(Seoul, Korea, Jan. 2023 – Feb. 2023)
    - Worked 48 hours, teaching basic software programming and artificial intelligence to students ranging from elementary to high school levels.
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## VOLUNTEER EXPERIENCE

- **Member, SeeSeon Academy**  
(Handong Global University, Mar. – Sept. 2017)
    - developed IT solutions for the disabled; served on the team for the visually impaired.
  - **Member, ISEL S-Lab**  
(Handong Global University, Feb. – Jun. 2018)
    - researched Software Engineering; served on the team for researching a source code analyzer.
    - Laboratory Leader
  - **Member, SW Education Pro bono**  
(Handong Global University, Feb. – Jun. 2018)
    - Educated middle school students on coding; served on the team for teaching App Inventor.
    - Won an excellence award for software education.
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## Publications

- **DROPSYS: Detection of ROP Attacks Using System Information**  
Seon Kwon Kim, Hongjoo Jin, Kyungho Joo, Jiwon Lee, Dong Hoon Lee  
Accepted for publication in the journal 'Computers & Security', dated March 8, 2024.
  - **Data Pointer Integrity Protection Technique Using ARM Pointer Authentication**  
Hongjoo Jin, Jiwon Lee, Seon Kwon Kim, Dong Hoon Lee  
Korea Information and Communications Society Winter Conference, 2022.
  - **A New Dynamic Control Flow Obfuscation Using Dummy Condition**  
Jiwon Lee, Hongjoo Jin, Seon Kwon Kim, Kijoong Kim, Dong Hoon Lee  
Conference on Information Security and Cryptography Summer, 2022.
  - **Design and Implementation of a Control-flow Attack Detection Method Using System Side Channel Information**  
Seon Kwon Kim, Hongjoo Jin, Jiwon Lee, Dong Hoon Lee  
Conference on Information Security and Cryptography Summer, 2021.
  - **Design and Implementation of Exception Handler Dedicated to Backward-edge Control-flow Integrity for Security and Compatibility**  
Hongjoo Jin, Seon Kwon Kim, Dong Hoon Lee  
Conference on Information Security and Cryptography Summer, 2021.
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## EDUCATION

**Handong Global University**, Pohang, South Korea  
Bachelor of Science in Engineering (Computer Science / Electronics Engineering)  
*Graduation: February 2021*  
*Honors: cum laude*  
**Graduate School, Korea University**, Seoul, South Korea  
Master of Science in Cyber Security (Software Security)  
*Graduation: February 2023*

