

# Yoonkyo Jung

Assistant Professor · Ph.D. Applicant

Cheongju-si, Chungcheongbuk-do, Republic of Korea

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## Brief Bio

Yoonkyo Jung is an Air Force captain from South Korea, working as an assistant professor in the Department of Computer Science at Republic of Korea Air Force Academy (ROKAF). He is a recipient of a tuition scholarship funded by the Republic of Korea Ministry of National Defense. His research interests include privacy-preserving networks, machine learning-driven networked systems, user privacy, computer security, and future wireless networks.

## Education

### Seoul National University (SNU)

M.S. in Computer Science and Engineering

Seoul, South Korea

Mar. 2019 - Feb. 2021

- Network Convergence & Security Laboratory
- Advisor: Ted “Taekyoung” Kwon
- Thesis: Consistency Analysis between Privacy Policy and Mobile Application [pdf]

### Republic of Korea Air Force Academy (ROKAF)

B.S. in System Engineering

Cheongju, South Korea

Mar. 2013 - Feb. 2017

- Thesis: Efficiency Validation and Improvement of Bus Booking Mobile Application

## Professional Experience

### Department of Computer Science, ROKAF

Assistant Professor

Cheongju, South Korea

Apr. 2022 - present

Department Chair

Jan. 2023 - Jan. 2024

Full-time Lecturer

Feb. 2021 - Mar. 2022

- Hired new faculty members and taught more than ten classes
- Established Department of AI and planned a curriculum

### Aerospace Force Weapon Systems Laboratory, ROKAF

Deputy Director

Cheongju, South Korea

Jan. 2023 - present

Researcher

Feb. 2021 - present

- Participated in three research projects related to weapon systems
- Held lab seminars by inviting experts both in and out of the school

### Aerospace Research Institute, ROKAF

Project Management Officer

Cheongju, South Korea

Dec. 2021 - Dec. 2022

- Managed national projects of R.O.K Air Force and organized academic conferences

### Department of Computer Science and Engineering, SNU

Research Assistant

Seoul, South Korea

Feb. 2019 - Jan. 2021

- Participated in research projects related to network, privacy, and indoor localization

### Air Defense Missile Command, ROKAF

Radar Maintenance Officer

Osan, South Korea

Apr. 2018 - Jan. 2019

- Maintained Ballistic Missile Early-warning Radar as a maintenance team leader
- Took charge of interpreting for resident technical agents from other countries

### Education and Training Command, ROKAF

Recruit Training Officer

Jinju, South Korea

Mar. 2017 - Mar. 2018

- Educated over 7000 airmen as a commander of 1st Airman Training Company

## Publications

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### <Journal>

#### **A Survey on Model Aggregation Approaches in Federated Learning**

Yoonkyo Jung, Jinyi Yoon

To be submitted

TBD

#### **Analysis of the Performance Improvement Evaluation Index of Air Force Advanced Trainers (T-50 Series) and Deriving Priorities**

Byungho Jung, Seong In Hwang, Yoonkyo Jung, Namkyu Lim

Journal of the Korean Society of Supply Chain Management, Vol.23, No.2 [pdf]

2023

#### **Reliability Analysis of Privacy Policies Using Android Static Analysis**

Yoonkyo Jung

KIPS Transactions on Computer and Communication Systems, Vol.12, No.1 [pdf]

2023

#### **Design of Surveillance Device Control System Using Audio Beamforming**

Jaesung Sim, Yoonkyo Jung

Journal of Military Science Research, Vol.73, No.2 [pdf]

2022

#### **Development and Performance Evaluation of Chatbot System for Office Automation**

Yoonkyo Jung

Asia-Pacific Journal of Convergent Research Interchange, Vol.8, No.10 [pdf]

2022

### <Conference>

#### **Development of Multi-copter Propeller Distortion Measurement Device Using Three-side Image Analysis**

Songhyeon Kim, Jaesung Sim, Yoonkyo Jung

KIISE Korea Computer Congress [pdf] [poster]

2022

#### **Reliability Analysis of Privacy Policies Based on Android Static Analysis**

Yoonkyo Jung

Annual Spring Conference of KIPS [pdf] [slide]

2022

#### **A Study on the Development and Performance Improvement of Chatbot for Office Automation**

Junsoo Park, Youngjun Kim, Yoonkyo Jung

KIICE Spring Conference [pdf] [slide]

2022

#### **Android Remote Unlocking Service using Synthetic Password: A Hardware Security-preserving Approach**

Sungmin Lee, Yoonkyo Jung, Jaehyun Lee, Byoungyoung Lee, Ted "Taekyoung" Kwon

IEEE Secure Development Conference (SecDev) [pdf] [slide]

2021

## Teaching

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### **Republic of Korea Air Force Academy**

Assistant Professor

- 2023 Fall: Data Communication, Hacking and Defense, Convergence Capstone Design (In progress)
- 2023 Spring: Network Programming, Embedded System, Convergence Capstone Design (Course Evaluations: 4.95/5.0)
- 2022 Fall: Hacking and Defense (Course Evaluations: 5.0/5.0)
- 2022 Spring: Embedded System (Course Evaluations: 5.0/5.0)

Cheongju, South Korea

Apr. 2022 - present

### **Republic of Korea Air Force Academy**

Full-time Lecturer

- 2021 Fall: Software Programming, Data Structure, Hacking and Defense (Course Evaluations: 4.87/5.0)
- 2021 Spring: Software Programming, Embedded System (Course Evaluations: 4.97/5.0)

Cheongju, South Korea

Feb. 2021 - Mar. 2022

### **Seoul National University**

Teaching Assistant

- 2020 Fall: Internet Security and Privacy

Seoul, South Korea

Sep. 2020 - Dec. 2020

## Research Projects

### Concept of Optimal Requirements for Air Force Future Basic Trainers

Korea Aerospace Industries (KAI)

ROKAFA

Oct. 2023 - Jun. 2024

### Performance Improvement of Air Force Advanced Trainers (T-50 Series)

Agency for Defense Development (ADD)

ROKAFA

Apr. 2023 - Jul. 2023

### Development and Implementation of Air Force Live-Virtual-Constructive (LVC) Architecture

Korea Aerospace Industries (KAI)

ROKAFA

Dec. 2021 - Dec. 2022

### Versatile Network System Architecture for Multi-dimensional Diversity

Institute for Information & Communication Technology Planning (IITP)

SNU

Jan. 2020 - Dec. 2020

### Smartcampus: Research on Localization Scheme based on Multiple Sensors

Samsung Electronics

SNU

May. 2019 - Apr. 2020

### Research on Security Scheme for Interconnection of Heterogeneous Networks

Electronics and Telecommunications Research Institute (ETRI)

SNU

Jun. 2019 - Nov. 2019

## Honors & Awards

- 2024 **Full Scholarship for Graduate Studies (PhD)**, Ministry of National Defense, Republic of Korea
- 2023 **Commendation of Lieutenant General**, Distinguished Service in the Graduation Ceremony, ROKAFA
- 2022 **Best Paper Award**, Korea Computer Congress, KIISE
- 2021 **Excellence Award**, Creative and Innovation Idea Hackathon, ROKAF
- 2019 **Full Scholarship for Graduate Studies (MS)**, Ministry of National Defense, Republic of Korea
- 2016 **Best Undergraduate Paper Award**, Student Paper Contest, KOPOMS

## Professional Memberships

- 2023 **Member**, Chungbuk AI-SW Education Sharing Council
- 2023 **Member**, Korea Society of Computer Information (KSCI)
- 2023 **Member**, Korean Institute of Information Technology (KIIT)
- 2022 **Member**, Korea Institute of Information and Communication Engineering (KIICE)
- 2022 **Member**, Korea Convergence Technology Research Society (KTCRS)
- 2022 **Lifetime Member**, Korea Information Processing Society (KIPS)
- 2021 **Lifetime Member**, Korean Institute of Information Scientists and Engineers (KIISE)

## Extracurricular Activity

- 2022 **Founder & Instructor**, ROKAFA Programming Club
- 2022 **Reviewer**, Asia-Pacific Journal of Convergent Research Interchange
- 2020 **Reviewer**, International Conference on ICT Convergence
- 2019 **Researcher**, Samsung Electronics SNU R&D Center
- 2019 **Program Chair**, eLearning Competition, Global IT Challenge
- 2019 **Technical Advisor**, Global IT Challenge, RI Korea
- 2016 **Battalion Cadet Commander**, Cadet Leadership, ROKAFA
- 2016 **Squadron Cadet Commander**, Cadet Leadership, ROKAFA

## Skills

- Languages** Python, C, C++, JavaScript, SQL, JAVA, Kotlin, GO
- Technologies** Docker, Git,  $\text{\LaTeX}$ , MySQL, NoSQL(MongoDB), HTML/CSS
- Platforms** Linux(Ubuntu), Windows, Nginx, AWS, Oracle Cloud, Azure
- Frameworks** TensorFlow/Keras, Pytorch