Sujin Han

Email: sujinhan@kaist.ac.kr
Mobile: +82-10-9215-2428
Github: github.com/vilotgit
Country of Residence: Republic of Korea

Education

- **Korea Advanced Institute of Science and Technology** — Daejeon, Korea
  MS-PhD Integrated Program - Electrical Engineering — *Feb 2022 -*
  GPA: 4.21/4.3
  Advisor *Sung-Ju Lee*
  Courses: *Software Security, Security of Emerging Systems, Machine Learning Application Trends in Information Security, Advanced Big Data-AI Integration, Speech Recognition Systems, Advanced Computer Networking and Cloud Computing*
- **Korea Advanced Institute of Science and Technology** — Daejeon, Korea
  Bachelor of Engineering - Computer Sciences; Minor in Intellectual Property — *Aug 2017 - Feb 2022*
  Major GPA 3.94/4.3, Total GPA 3.78/4.3, Cum Laude
  Courses: *Computer Networking, Operating Systems, Computer Architecture, AI/ML, NLP, Programming Language, Compiler Design, Concurrent Programming, Algorithms, Data Structures*

Research Experience

- **Networking and Mobile Systems Laboratory (NMSL)** — Daejeon, Korea
  Undergraduate Research Intern, Graduate Student — *Aug 2020 - Present*
  - **Micro-virtualization on Android**: Contributed to a project that avoids Android compatibility crashes through micro-virtualization. Modified AOSP code to support micro-virtualization on emulators and devices. Wrote custom script to measure per-process memory overhead. Paper submitted to MobiSys 2024 for review.
  - **Content Moderation on Android**: Contributed to a project that aims to understand and support interactions between people with eating disorders and digital food content. Implemented a service that identifies and hides food content on YouTube as an Android app. Paper focused on the system contributions is submitted to CHI 2024 for review. The preprint of another paper focused on understanding the interactions is available on arXiv. Paper link: https://arxiv.org/abs/2311.05920
  - **Smart Contract Fuzzing**: Leading a project that aims to automatically generate financially profitable exploits for vulnerable smart contracts with fuzzing. Modified foundry code to implement a fuzzer on Rust-based EVM.
- **Natural Language Processing and Computational Linguistics Lab (NLPCL)** — Daejeon, Korea
  Individual Research — *Dec 2018 - Feb 2019*
  - Compared Support Vector Machine and Näive Bayes model for identifying sentiment in movie review data

Projects

- **Phishing App Detection (Android, Security)**: Designed and implemented a phishing app detection system. Achieved F1 score of 0.93 on around 200 phishing apps and 200 non-phishing apps. Currently filing for a patent. (Aug 22 - Dec 22)
- **Simple OS Implementation (OS)**: Labs designed to enhance different OS functionalities, such as scheduling and memory management. Completed JOS projects in a team of 2. Project description: https://github.com/casys-kaist/jos (Aug 21 - Dec 21)
- **Simulated TCP Layer Implementation (Computer Networking)**: Completed KAIST Education Network System projects (KENSv3) in a team of 2. Project description: https://github.com/ANLAB-KAIST/KENSv3 (Mar 21 - July 21)
- **Intoxicated Speech Detection (AI, Speech Recognition)**: Developed a CNN model that can detect whether a person is sober or intoxicated given her speech data in a team of 3.
  Github: https://github.com/vilotgit/kaisd (Aug 20 - Dec 20)
- **Social Platform for Musicians (Social Computing, Web)**: Developed a web app to support remote collaboration amongst amateur musicians in a team of 4. Core functionalities include personal profile pages and communication tools designed for musical collaboration (shared annotatable sheet music, commenting threads that can be pinned to shared sheet music, music term dictionary).
  Github: https://github.com/SangHyeon-Lee/PitchPerfect (Aug 20 - Dec 20)
- **Pintos Projects (OS)**: Completed pintos-kaist projects (simulated OS development on x86-64 architecture) in a team of 2. Project description https://casys-kaist.github.io/pintos-kaist/ (Mar 20 - July 20)
- **KAIST Puple Online Labyrinth (Web)**: Developed the front end of an online labyrinth website.
  Link: https://kaistpuple.com/present/main.php (Dec 19 - Feb 20)
- **Simple C Compiler (Compiler Design)**: Developed a compiler that can compile basic C code in a team of 5. Used lex, yacc, C++, and git to build the compiler. (Aug 19 - Dec 19)
- **FastText Evaluation with Unusual Corpora (AI, NLP)**: Modified "Enriching Word Vectors with Subword Information" (ACL 2017) in a team of 3. Produced two sets of subword vectors using fastText with two different sets of corpora. Compared the performance of two sets of subword vectors. Poster link: https://bit.ly/fasttext-eval-poster (Aug 19 - Dec 19)
- **Development Camp (Android, Web, Unity)**: Developed an Android app that recognizes handwritten numbers and helps kids practice basic arithmetic skills, an online platform for learning and coding in Scala, a set of mini games running on Unity engine. (June 18 - Aug 18)

Honors and Awards

- **Students with Outstanding Questions (EE595 Software Security, Spring 2022)**
  Awarded to students that asked challenging and creative questions
- **Dean's List in College of Engineering (Fall 2020)**
  Awarded to top 3% among 2900+ students

Teaching Experience

- **Head Teaching Assistant at KAIST (Fall 2023)**
  Operating Systems and System Programming for Electrical Engineering (EE415)
- **Head Teaching Assistant at KAIST (Spring 2023)**
  Introduction to Environment and Tools for Modern Software Development (EE485)
- **Teaching Assistant at KAIST (Fall 2022)**
  Mobile Computing, Sensing, Learning, and Interactions (EE595)
- **Teaching Assistant at KAIST (Spring 2022)**
  Computer Networks (EE323)

Skills Summary

- **Languages**: Korean(native), English(fluent), Mandarin(intermediate)
- **Confident Programming Languages**: Python, Java, Kotlin, C, Rust, Solidity
- **Platforms**: Android, Linux