YUQIAN HUO

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PROFILE

I am a dedicated graduate Computer Science student interested in software security and system security. I have mastered C/C++ and am familiar with shell scripts, makefile, llvm and assembly languages. I have multiple experiences on security, cyber-physical systems, software development and IoT. Fluent in English and native in Chinese.

EDUCATION

Washington University in St. Louis, St. Louis, MO 01.2020 - (Expected)12.2021
McKelvey School of Engineering
Major: Computer Science **Degree:** Master of Science
GPA: 3.8
Core courses: Object-Oriented Software Development Laboratory, Operating Systems Organization, Introduction to Computer Security, Recent Advances in Computer Security and Privacy

Southeast University Chengxian College, Nanjing, China 08.2015 - 06.2019
School of Electronic and Computer Science
Major: Electronic and Information Engineering **Degree:** Bachelor of Engineering
GPA: 3.78 **Rank:** 2/83
Core courses: Fundamentals of Computer and C program Design Theory, Fundamentals of Software Technology, Comprehensive Programming Design

PUBLICATION & PATENT

Jingyi Xie, Yuqian Huo, Design and Improvement of a New Smart Cleaning Robot, *Electronic Test*, Vol.11, pp. 27-29, 140, June 2018.
A Smart Cleaning Robot, Patent no. 201820713157.2

RESEARCH EXPERIENCE

Research Assistant 07.2021 - Present
Washington University in St. Louis, Computer Security & Privacy Laboratory *St. Louis, MO*

- Measured the number of indirect jumps, returns, write instructions and read instructions in those applications.
- Applied Clang CFI on those applications to measure the runtime overhead.
- Utilized SVF to construct the points-to analysis of applications on real-time operating systems.
- Currently working on applying CFI mechanisms on real-time operating systems using binary instrumentation.

Research Assistant 08.2018 - 01.2019
Southeast University, State Key Laboratory of Bioelectronics *Nanjing, China*

- Conducted communications routinely with doctors in Gulou Hospital to acquire information about project requirement, especially details on software functional requirements.
- Implemented C++ on Visual Studio to build MFC graphic user interface for the team to visualize B-scan results.
- Helped the team debug using Caffe deep learning framework and Faster-RCNN algorithm to automatically recognize various fetal organs.

WORK EXPERIENCE

Computer Science Assistant 01.2021 - Present
Washington University in St. Louis *St. Louis, MO*

- Assisted professor holding studio sessions for object-oriented programming using C++.
- Assisted professor as a grader and held Office Hours weekly.

PROJECT

Design of Chess Games and Linux Filesystem 01.2020 - 05.2020
https://github.com/clairehyq/linux-fsystem *St. Louis, MO*

- Designed a C++ program with which you can play TicTacToe or Gomoku chess game.
- Utilized OOP feature to realize to let user to choose either to play TicTacToe or Gomoku, to show the chess board after each turn, and to output the game results.
- Used C++ to build a software simulation of a file system to realize linux-like command, such as ls, cp, rm, touch, cat, display, rename, grep and chmod.

Design and Improvement of a Smart Cleaning Robot 04.2017 - 05.2018
Project Leader *Nanjing, China*

- Wrote programs with C Language and took advantages of PWM wave to control the motion directions and the speed of the drive.
- Made the robot shell by 3D printing and assemble the rotating brushes.
- Programmed ultrasonic and infrared rays sensor to detect the obstacles to respond promptly, and enhance the accuracy.
- Added a relay to connect the module of sound control with the drive and realized the function of voice control and man-machine interaction.

Design of a Digital Breath Alcohol Tester using MSP430F149 08.2017-09.2017
Project Leader *Nanjing, China*

- Wrote the A/D conversion program of the alcohol sensor to transform the analog value to digital value.
- Facilitated the display program of the 12864 LCD monitor and the control program of three indicator lights and buzzer on the package.
- Modified the alcohol concentration program and alcohol sensor to enhance the accuracy of the tester according to data on the website of China General Administration of Quality Supervision, Inspection and Quarantine.

HONORS AWARDS

Excellent Graduates at Southeast University Chengxian College 06.2019
Outstanding Student for Innovation Practice at Southeast University Chengxian College 05.2019
First Prize for Comprehensive Scholarship at Southeast University
Chengxian College, won three times 10.2016-10.2018
Award for Academic Excellence at Southeast University Chengxian College 10.2017
First Prize, Internet+ College Students Innovation and Entrepreneurship Competition
at Southeast University Chengxian College 09.2017

SKILLS

Computer Languages	C/C++, Intel and ARM Assembly Language, Java, Python, MATLAB
Databases	MySQL
Tools	Git, Vim, Bash Shell, Makefile, AWS
Compiler	Clang, LLVM, GCC