

XIANG CHEN

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EDUCATION

The Hong Kong University of Science and Technology	2024/08 - now
Ph.D. student in Prism Lab, CSE, supervised by Charles Zhang .	
Shanghai Jiao Tong University	2021/09 - 2024/03
Master degree in Cyber Security, supervised by Yue Wu and Jiaping Gui .	
Thesis: C/C++ system software Static analysis techniques through the lens of Integer Overflow Detection	
Shanghai Jiao Tong University	2017/09 - 2021/06
Bachelor degree in Information Security, selected to the Zhiyuan Honor Program .	
Thesis: Vulnerability Detection and Analysis for Massive Large-scale IoT Devices	
Peking University Summer School	2019/07 - 2019/08

INDUSTRY EXPERIENCE

Hong Kong University of Science and Technology	2024/06 - 2024/08
Research assistant in the Clearblue project. My job is to port the analysis framework to modern LLVM infrastructures.	
NIO Inc.	2022/10 - 2023/10
Funding project “decreasing FP and FN rates in static C/C++ program analysis” from Cyber Security Academy Student Innovation Grant Program. The project focuses on using Facebook Infer ’s Abstract Interpretation framework and taint analysis technique in detecting Uninitialized Value issues in Linux Kernel.	
Huawei Technologies Co., Ltd.	2023/07 - 2023/09
Develop and maintain rules for enterprise-domestic C/C++ static analysis tools and apply them to 5G base station codebases. Research on Large Language Model-assisted program analysis on customized memory management functions.	
Shanghai Qizhi Institute	2022/07 - 2022/11
G.O.S.S.I.P Research Internship, doing weekly paper reading and research on (1) automatic program repair using LLVM Pass and Daikon invariant detector and (2) automatic bug fix for use-after-move issues in C++ 11 using Clang-Tidy .	
Shanghai Feysh Technology Co.,Ltd	2021/07 - 2021/09
Manually review more than 4000 analysis results of ClangStaticAnalyzer performed on Juliet C/C++ Test Suite. Implement four ClangStaticAnalyzer checkers for SEI CERT C Coding Standard .	

TEACHING EXPERIENCE

IS308: Computer System Security (The 1st “John Hopcroft” Class)	2023/02 - 2023/06
Provide mentorship on five labs in binary/web security and cryptography. Host a Jeopardy-style final exam.	
NIS7021: Software and System Security 🗣	2022/10 - 2023/01
Design two labs in reverse engineering, and dynamic instrumentation.	



OPEN-SOURCE CONTRIBUTIONS

Open Source Promotion Plan (openEuler) 🗣🌐	2023/07 - 2023/09
Enhance LLVM InstCombine pass with a peephole optimization, which can eliminate <code>abs()</code> in ternary expressions like: <code>x>y?abs(x-y+1):0</code> and combine the original if-else-branch to linear CFG using the AArch64 <code>csinc</code> instruction.	
SJTUBeamer 🗣	2021/04 - 2021/11
Shanghai Jiao Tong University official L ^A T _E X beamer template, gained more than 500 stars.	

PUBLICATIONS

- Xiang Chen. 2024. IntTracer: Sanitization-aware IO2BO Vulnerability Detection across Codebases. In 2024 IEEE/ACM 46th International Conference on Software Engineering: Companion Proceedings (ICSE-Companion ‘24) 📄🗣
- Tianming Zheng, Haojun Liu, Hang Xu, Xiang Chen, Ping Yi, Yue Wu, Few-VulD: A Few-shot learning framework for software vulnerability detection, Computers & Security, 2024 📄

TALKS

- **Xiang Chen**, Siqi Ma. 2023. Custom Memory Functions Demystified: A tutorial of memory corruption detection using Goshawk. In ACM ASIA Conference on Computer and Communications Security (**ASIA CCS '23**) 
- **Xiang Chen**. 2023. C/C++ static analysis with LLVM compiler infrastructure. Voice of Information Security-Young 

AWARDS

Postgraduate Scholarship (PGS)	2024/09
Shanghai Jiao Tong University Outstanding Graduate (<10%)	2024/03
Rong Chang Leadership Scholarship (<1%)	2021/11 - 2023/11
DEFCON CTF 30 2nd place (played with Katzebin)	2022/08
Zhiyuan Honor Bachelor Degree (Cum Laude , <1%)	2021/06
Shanghai Outstanding Graduate (<5%)	2021/06

SERVICES

Executive Committee Member of China Computer Federation (CCF) <u>Student Chapter</u> in SJTU	2022/11 - 2023/12
GeekPwn 2019 volunteer	2019/10

SKILLS

- Programming Languages: C/C++ ≥ Python > Rust > OCaml
- Development Toolchains: VSCode, Vim, CMake, LLVM/Clang, GDB, Docker, Git
- Capture-The-Flag: IDA/Binja, Pwntools, Angr, Wireshark, Sage