

吕鑫

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🎓 教育背景

北京师范大学, 北京

2014 – 至今

学士 计算机科学与技术, Major GPA: 3.60, TOEFL: 101

👨‍💻 实习经历

Red Hat Software (Beijing) Limited Company, 北京, 中国

2018 年 3 月 – 至今

实习 虚拟化测试开发实习生

- 参与 Linux Kernel、Network function virtualization 的测试, 完善和优化自动化测试框架

德克萨斯大学奥斯汀分校, 奥斯汀, 美国

2017 年 7 月 – 2017 年 10 月

实习 科研实习生 Advised by Prof. Isil Dillig

STAC - Space/Time Analysis for Cybersecurity

- STAC 项目旨在开发新的技术和工具来检测算法的空间和时间资源利用行为, 包括算法复杂度攻击和旁路攻击
- 基于 ASM 实现了计算 Java 运行路径上所执行指令条数的工具, 并以此作为衡量旁路攻击的手段
- 开发了利用一系列布尔变量约束产生测试数据的方法, 检测潜在 Denial of Service 漏洞
- 优化 shell & Python 脚本, 自动化测试过程

北京大学计算机科学与技术研究所

2016 年 11 月 – 2017 年 6 月

实习 数据管理实验室实习生 Advised by Prof. Lei Zou

gStore - 管理大规模图结构数据的图数据库引擎

- 利用 C++ 为数据库系统建立了 HTTP RESTful 网络接口
- 实现了 HTTP 强连接, 异步请求与处理
- 实现了多 session 支持

👨‍💻 项目经历

iOS App - 北师大小鸭教务助手

2017 年 1 月 – 至今

合作开发者 作品展示: <http://xuhongxu.com/xiaoya/>

- 整合北师大官方学生账户系统, 无第三方账户注册
- 实现了查询成绩、查询当前空闲教室和显示课表功能
- 深度整合了 iOS 系统的 Calendar 和 Reminder, 并开发了 Widget 插件

2016 年北师大官方 iGEM 网站

2016 年 9 月 – 2016 年 10 月

软件队队长 作品展示: <http://2016.igem.org/Team:BNU-China>

- 基于 HTML/CSS/JavaScript 实现了网站的全部前端页面
- 网站全面采取了 Bootstrap 框架, 并利用了 Flex Box Model 和 JQuery 使得页面兼容不同屏幕尺寸的电脑、平板、手机

♥ 获奖情况

Honorable Mention, 美国大学生数学建模竞赛

2016 年 2 月

凌云奖学金, 颁发给优秀的信科学院学生, 获奖比例 4/500

2016 年 4 月

Gold Medal, iGEM 国际遗传机器设计竞赛

2016 年 10 月

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Education Background

College of Information Science and Technology(Beijing Normal University)

Sep. 2014 - PRESENT

B.S. IN COMPUTER SCIENCE AND TECHNOLOGY

Beijing, CHINA

Overall GPA: 3.50/4.0, Major GPA: 3.60/4.0, TOEFL: 101, GRE: 149 + 169 + 3.0

Awards: Lingyun Scholarship, *which is honored for excellent students in CS department.* (4/500)

First Prize Scholarship for Competition, *which is honored for outstanding performance in academic competitions.* (16/500)

Research/Intern Experience

Red Hat Software (Beijing) Limited Company

Mar. 2018 - Present

QUALITY ENGINEERING INTERN

Beijing, China

- Worked on kvm testing and Linux kernel research, with a focus on Network function virtualization
- Involved in developing new open source testing framework in *Python*.

STAC - Space/Time Analysis for Cybersecurity

Jul. 2017 - Oct. 2017

ADVISOR: ASSOCIATE PROFESSOR ISIL DILLIG, UNIVERSITY OF TEXAS AT AUSTIN

Austin, U.S.A

- STAC is a project that aims to develop new techniques and tools to identify vulnerabilities related to the space and time resources usage behavior of algorithms, including algorithmic complexity and side channel attacks.
- Implemented a tool, *InsnCounter*, to count the number of *Java* bytecode instructions along the execution path with *ASM*.
- Used *InsnCounter* to evaluate the difference between a pair of inputs in the testing process of side channel attacks.
- Used first-order logic language like *Alloy* to find models which could satisfy combinations of specific predicates.
- Wrote hundreds of lines of *shell* scripts code to make the testing process become automatic.

gStore - A Graph Database Engine for Managing Large Graph-Structured Data

Nov. 2016 - Jun. 2017

ADVISOR: ASSOCIATE PROFESSOR LEI ZOU, PEKING UNIVERSITY

Beijing, CHINA

- Constructed the HTTP RESTFUL interface independently with *C++*.
- Supported concurrent requests by implementing HTTP's persistent connection and asynchronous request handling, etc.
- Implemented the functionality of separated sessions by different users.

Projects Experience

iOS App - A Dedicated Educational Administration Assistant for Students in

Jan. 2017 - PRESENT

Beijing Normal University

COOPERATIVE DEVELOPER

Beijing, CHINA

- Integrated with the official school's account, with no third-party account needed.
- Implemented the functionality of querying schedules and grades of exams, showing the course schedule for the whole semester, and querying the empty classroom of the entire campus, which helped students find seats to study.
- Integrated with Calendar, Reminder and Widget inside iOS11, deeply mixed with iOS system.
- With more than 600 downloads on App Store. Viewable here: <http://xuhongxu.com/xiaoya/>

Official Website for iGEM2016-BNU-China

Sep. 2016 - Oct. 2016

TEAM LEADER

Beijing, CHINA

- As the team leader, responsible for the whole web design and team work.
- Implemented the front-end of website with HTML/CSS3/Javascript.
- Achieved some amazing effects advanced technologies, including Flex Box Model, Bootstrap and JQuery.
- Viewable here: <http://2016.igem.org/Team:BNU-China>.

Honors & Awards

2016 **Gold Medal** The International Genetically Engineered Machine(iGEM) Design Competition

Boston, U.S.A

2016 **Honorable Mention** COMAP's Mathematical Contest in Modeling(MCM)

U.S.A

Skills

Versed **Programming Language** C, C++, Python, Swift, Java, HTML, CSS, Javascript, etc.

Mastered **Professional Knowledge** Django, Bootstrap, JQuery, ASM, etc.