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

👥 实习/项目经历

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
- 编写了优化的 shell 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

iOS App - 北师小鸦教务助手   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

ℹ 其他

- GitHub: https://github.com/lvxiaoxin
- 语言: 英语 - 熟练 (TOEFL 101)

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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 Experience

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

BNU Little Crow - A Dedicated Educational Administration Assistant for Students in Beijing Normal University *Jan. 2017 - PRESENT*

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.
- Held a small product launch via conference and got more than 300 downloads after putting on it on the App Store.

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`.

A Notepad App Based on Assembly Language *Dec. 2016 - Jan. 2017*

Independent developer *Beijing, CHINA*

- Implemented advanced functionality such as searching and highlighting the specific text given by users.
- Developed in DOSBox environment, Language based on 8086.

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++, Swift, Java, Python, PHP, HTML, CSS, Javascript, etc.
Mastered	**Professional Knowledge**	Boost, Laravel, Bootstrap, JQuery, ASM, etc.