

Si Chen

SOFTWARE ENGINEER

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Education

Ph.D., Computer Science and Engineering

Buffalo, NY

UNIVERSITY AT BUFFALO - SUNY, GPA 3.8

Sep. 2012 - May. 2016

- Research Assistant in Ubiquitous Security and Privacy Research Laboratory (UbiSeC Lab), Advisor: Dr. Kui Ren

M.S., Electrical Engineering

Buffalo, NY

UNIVERSITY AT BUFFALO - SUNY, GPA 3.8

Sep. 2010 - May. 2012

- Thesis: "Groundwave Modelling and Online Simulation System for Advanced HF Radio Networking" Advised by Professor Tommaso Melodia

B.S., Measuring & Control Technology and Instrumentations

Beijing, China

CHINA AGRICULTURAL UNIVERSITY

2006-2010

- Graduated with Honors, Top 100 Excellent Graduate Theses award

Skills

Heavily used Python, C++, Haskell

Learning Java, Javascript, Clojure, Perl, Go, Scala

Hacking around Android, PHP, Tcl/tk, OCaml

OS Heavy Arch and Gentoo Linux user with insight into Linux kernel

Authoring Vim, \LaTeX

Web Django, Web.py, Meteor (Javascript), Snap (Haskell), HTML5, WebGL, jQuery, CSS(Bootstrap UI)

Selected Projects

AcousAuth: An acoustic-based mobile application for user authentication

Project Leader

THIS PROJECT AIMS AT DEVELOPING A **HIGHLY SECURE ALTERNATIVE NFC SYSTEM**.

Jan. 2013 - Aug. 2013

- **GitHub:** <https://github.com/quake0day/Jigglypuff> **Vimeo:** <http://vimeo.com/77708077>
- **Techniques:** Python, C++, Android, jQuery, HTML5, Web.py, Django, MySQL, CSS(Bootstrap UI)
- Designed a smartphone empowered system for personal authentication featuring a seamless, faster, easier and safer authentication process without the need of special infrastructure.
- Shortlisted in the 19th Annual International Conference on Mobile Computing and Networking (ACM Mobicom'13) App Competition (**Top 10**).

IndoorCrowd: Mapping of indoor building structures through mobile devices

Project Leader

THIS PROJECT IS **THE FIRST TO PROPOSE, DESIGN AND IMPLEMENT** A SMARTPHONE-BASED CROWDSOURCING

Jun. 2013 - Feb. 2015

SYSTEM THAT EXPLORES THE POWER OF UNTRAINED INDIVIDUALS TO GENERATE BUILDING INTERIOR VIEWS AT SCALE.

- **GitHub:** <https://github.com/quake0day/Dragonite>
- **Techniques:** Python, Spark, Android, C++ (OpenCV), Web.py, jQuery, Matlab, MySQL, WebGL, CSS(Bootstrap UI)
- Proposed a low-cost crowdsourcing-based method to reconstruct indoor floor plan that by utilizing sensor-rich video data from mobile users.
- Achieved a significant improvement of accuracy compared with other indoor scene reconstruction systems, according to a long-term real-world experiment on 30 volunteers.

FreeTrack: Tracking mobile social network users

Core Member

THIS PROJECT SERVES AS A **CRITICAL SECURITY REMINDER** OF THE CURRENT LOCATION BASED SOCIAL NETWORKS

Jan. 2013 - May. 2013

(LBSNs) PERTAINING TO A VAST NUMBER OF USERS.

- **GitHub:** <https://github.com/kkspeed/FreeTrack>
- **Techniques:** Clojure, Android (App Dev, Disassembly with Smali, MonkeyRunner)
- Developed an automated user location tracking system and tested it on popular location based social networks (e.g. Momo, Skout and Wechat).
- The evaluation results showed that this system can track a target with high accuracy and can readily recover users' Top 5 locations.

Intellectualized Greenhouse Measuring & Control System

Project Leader

THIS PROJECT AIMS AT DEVELOPING A GREENHOUSE MANAGEMENT SYSTEM USING WIRELESS SENSOR NETWORK.

May. 2009 - May. 2010

- **Techniques:** Python, C, Python, PHP, MySQL, Javascript
- Used CC2430 wireless node and Zigbee stack (Z-stack) to measure and control a greenhouse model's humidity and temperature.
- Used Python, PHP, Javascript (jQuery), MySQL and C to create a realtime B/S System.
- Designed a PCB with controllers that can use CC2430 with computer to remote control the greenhouse model.

Internships

Sina Corp.

Application Dev Engineer

SEARCH ENGINE GROUP

Apr. 2010 - July. 2010

- **Techniques:** Python, C, Javascript(jQuery), PHP, CSS
- **Scale:** Approximately 12300 lines of code by myself within 3 months.
- Used Python (Matplotlib), Javascript (jQuery) and PHP with MySQL to build an UNIX cluster administration system
- Designed and implemented an algorithm to calculate daily hottest words from Weibo (Chinese twitter) search log in Python
- Created an usage frequency indicator to show Weibo's current usage frequency in different areas using Python, C, PHP with MySQL, Javascript

ASSE/WH China

Web Developer & Administrator

FRONT-END GROUP

Oct. 2007- Feb. 2008

- **Techniques:** PHP, Javascript
- **Scale:** Approximately 10700 lines of code by myself within 4 months.
- Re-constructed company's website using Wordpress CMS System
- Built an online registration system using PHP and MySQL

Honors & Awards

2015	Finalist , Student Travel Grant Awards, IEEE ICDCS Conference 2015	Columbus, OH
2013	Finalist , The 19th Annual International Conference on Mobile Computing and Networking (ACM Mobicom'13) App Competition	Orlando, FL
2010	Finalist , Excellent Graduate Award in China Agricultural University	Beijing, China
2010	Finalist , Top 100 Excellent Graduate Theses in China Agricultural University	Beijing, China
2009	Finalist , National University Student Innovation Program Award,	Beijing, China
2009	3rd Award , International Interdisciplinary Contest in Modeling (ICM)	Beijing, China
2007-2009	1st-3rd Award , Scholarship for Excellent Academic Performance	Beijing, China
2006	1st Place , "The best debater" title in debate competitions	Beijing, China

Selected Publications

- **Si Chen**, Muyuan Li, Kui Ren, Xinwen Fu, Chunming Qiao, "Rise of the Indoor Crowd: Reconstruction of Building Interior View via Mobile Crowdsourcing," in **Proceedings of the 13th ACM Conference on Embedded Networked Sensor Systems (SenSys)**, 2015.
- **Si Chen**, Muyuan Li, Kui Ren, Chunming Qiao, "CrowdMap: Accurate Reconstruction of Indoor Floor Plan from Crowdsourced Sensor-Rich Videos," in **Proceedings of the 35th IEEE International Conference on Distributed Computing Systems (ICDCS)**, 2015.
- Muyuan Li, Haojin Zhu, Zhaoyu Gao, **Si Chen**, Le Yu, Shangqian Hu, Kui Ren, "All your location are belong to us: Breaking mobile social networks for automated user location tracking," in **Proceedings of the 15th ACM international symposium on Mobile ad hoc networking and computing (Mobihoc)**, 2014.
- Bingsheng Zhang, Qin Zhan, **Si Chen**, Muyuan Li, Kui Ren, Cong Wang, Di Ma, "PriWhisper: Enabling Keyless Secure Acoustic Communication for Smartphones," in **IEEE Internet of Things Journal**, 2014.