Hao Zhou

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EDUCATION

Syracuse University Syracuse, NY
Bachelor of Science in Computer Science August 2016 – December 2018
GPA:4.0/4.0

Nanchang University Nanchang, China
Bachelor of Science in Electrical Engineering and Automation September 2014- June 2016
GPA: 89.45/100 (ranking: 1/150)

PUBLICATION

Ju Chen, Yuzhe Tang, Hao Zhou, "Strongly Secure and Efficient Data Shuffle on Hardware Enclaves", SysTex 2017 at ACM SOSP, https://doi.org/10.1145/3152701.3152708, October 2017

PROFESSIONAL EXPERIENCE

HIKVISION Hangzhou, China
Software developer and tester August 2019 - October 2020

- Participated in the development of software to help HIKVISION's human resource department conduct recruiting process and manage employee information in a more efficient and effective way
- Contacted with branch offices and document their specific requirements; worked with the business analysis department to carry out a system design document, and assisted senior architects in carrying out high-level architecture design
- Wrote code cases for Unit Testing, and System Integration Testing

TEXT & LISTEN (a startup of three people) Syracuse, NY
Chief technology officer (co-founder) January - June 2019

- Developed an android app allowing college students to connect with peers and licensed professionals in terms of mental health issue in a one-to-one anonymous setting
- Implemented the MVP (Minimum Valuable Product) using XML for the front end, and Java, MYSQL for backend; designed the app's interface referring to source code of "slide card" function on GitHub
- Got $5000 funding from Blackstone Launchpad; had 23 licensed therapists and more than 400 users

PART-TIME EXPERIENCE

GOOGLE CHINA Shanghai, China
Part-time Assistant October- November 2020

- Participated in the design of a web application to provide a platform for couples to interact with each other by recording their life and memorable experiences (document design ranges from high level to low level conforming to industrial standard)
- Implemented front-end design using html5, JavaScript and back-end design using Springboot framework, Java, RESTful API, and MySQL

AMAZON CHINA Beijing, China
Part-time Assistant July - August 2019

- Implemented cluster analysis for machine learning project using Python, K-means, and Mean Shift; utilized the analysis results to decide the proportion of manual-categorizing and rules-categorizing (computer conducted) and optimize the human resource structure accordingly
- Built a Natural Language Processing model using Python, pandas, NumPy, re, jieba, Mecab, scikit-learn, beautifulsoap4 to figure out keywords for the goods descriptions, which is highly representative during categorizing and embedded it into a software application for categorizing importing goods

GETA TECHNOLOGY Hangzhou, China
Software Developer June- August 2018

- **Inventory Management System**: Applied Java and MySQL to implement data manipulating (such as retrieving, adding, editing, and deleting data, etc.) with database
- **Mobile Device Application Design**: Applied Html5, CSS, JavaScript, and MySQL to develop a website with a new layout which is more recognizable on mobile devices

RESEARCH EXPERIENCE

SYRACUSE UNIVERSITY, Syracuse, NY
Air Force Research Lab September – December 2018
Research assistant, Advisors: Dr. Shiu-kai Chin, Dr. Erich Devendorf, Dr. Wenliang Du

Concord Dawn Project: It was composed of a set of escalating scenarios that require technical excellence, adaption, and strong teamwork to achieve mission goals; it supported an airstrike on a target through gathering and interpreting intelligence, developing a plan to achieve mission objectives, and executing it as part of a time-phased mission; the main objective was to destroy the target with Unmanned Aerial Vehicle (UAV)

- Used Wireshark to capture network traffic where the target was connected to, figured out the IP of his cell phone, and updated his precise location to UAV continuously
- Hacked into the router of the network secretly; used "scp" to duplicate router log; used related router shell commands to set

the firewall to block only incoming traffic to his device so that he won't get notified by others
- Restored the log by replacing it with a copy we duplicated at the beginning

Full Stack Security Laboratory at Syracuse University January– May 2018 & May- September 2017
Research assistant, Advisor: Dr. Yuzhe Tang
- **Implemented Algorithms Using Cache Miss Oblivious Pattern**: Implemented patterns in a previously published paper by creating a library; applied it to different algorithms to get secure versions of them
- **Go-Ethereum Blockchain Education Program Design**: Retrieved possible Ethereum coins flows among the users in Blockchain by running JavaScript crawler, measured by accuracy, which is over 90%
- **Implemented Data-Oblivious External Shuffling on SGX:** Implemented more secure but highly efficient version of Melbourne shuffle using Intel SGX enclave, measured by the overhead of which is less than 30%

LEADERSHIP EXPERIENCE

Orange Hacker Association January - May 2018
Leader of Undergraduate Linux Security Team Syracuse, NY
- Participated in a weekly meeting to discuss different security topics
- Gave lectures about some classic security topics and introduced my research field
- Trained the undergraduate team for National Collegiate Cyber Defense Competitions

SIGNIFICANT COURSE PROJECTS

CSE400: Machine Intelligence with Deep Learning November - December 2018
Group Project: Faster-RCNN Analysis & Improvement, *team leader* Syracuse, NY
- Recognized the format of input and output data; installed, trained, and tested the neural network using Google cloud.
- Identified the structure of the network and loss function and the selection of hyper-parameters
- Improved and extended faster-RCNN model in several aspects, such as improving optimizer to get better accuracy
- Implemented resizing function to align input images with different sizes

CIS400: Social Media & Data Mining April - May 2018
Group Project: Bitcoin Tweets Sentiment Analysis, *team leader* Syracuse, NY
- Wrote python program with Twitter API collecting over 100,000 tweets related to cryptocurrencies (preferring Bitcoin) and with API from Poloniex.com to collect price data of 50 different cryptocurrencies
- Utilized Python package Textblob and VaderSentiment for sentiment analysis, enigma and pandas for correlation analysis
- Outcome: Sentiment can be a reasonable indicator for short term momentum and is universally observable. Strong positive correlations exist between different kinds of digital currencies

CIS454: Software Implement April 2018
Group Project: Time Bank, *team leader* Syracuse, NY
- Used Java, XML, and Firebase to implement an android mobile application where people can trade their time as local currency (the platform provides a means for people to request service and also provide service for others; Google map API is used to calculate distance and provide navigation; rating system was also included)
- Was selected as work of excellence for Open House Event of the school

CIS554: Object Oriented Programming C++ March 2018
Personal Project: Multi-thread Programming Syracuse, NY
- Used C++ to implement a Classic producer and consumer with special requirements (in my program, the resources were used up with no deadlocks)
- My work was selected by Professor Roger Chen as the one with the best performance among all the graduate and undergraduate students

HONORS AND REWARDS

Summa Cum Laude, Syracuse University December 2018
The Louis D. Martini Award for Outstanding Design Project, Syracuse University December 2018
Dean's List, Syracuse University 2016-2018
Distinguished Scholarship, Nanchang University June 2015 & February 2016 & June 2016
Merit Student, Nanchang University June 2015 & June 2016
First-prize Scholarship, Nanchang University February 2015

TECHNICAL SKILLS

Relevant Coursework: Data Structure, Algorithm, Operating System, Algorithm, Discrete Math, Linear Algebra
Specific Fields: Software, Hardware & Internet Security, Machine Learning, Data Mining
Technical Skills: Proficiency in C (4 yrs.), C++ (2 yrs.), java (3 yrs.), Latex (2 yrs.), Haskell (3 yrs.), python (2 yrs.), MYSQL (3 yrs.), JavaScript (0.5 yr.), HTML(1 yr.), Springboot (1 yr.), mybatis (3 m), maven(1 yr.), RESTful API (1 yr.)
Tools: Microsoft Visual Studio, Git, Eclipse, IDEA, Android Studio, Wireshark, PyCharm
Hardware: Intel SGX enclave