

# Jianing Zhou

1901 N Lincoln Ave, Apt 214, Urbana, Illinois, 61801, USA

(+1) 217-979-6782(Mobile)      zjn1746@illinois.edu

## EDUCATION

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### Shanghai Jiao Tong University (SJTU)

B.Eng. in Information Security

Sept 2015-June 2019

- Overall GPA: **3.77/4**      Major GPA: **3.86/4**
- Relevant Coursework: Computer Communication and Network (93/100); Cyber Security Innovation (99/100); Data Communication (94/100); Mobile Communication (93/100)

### University of Illinois at Urbana-Champaign(UIUC)

MS in Computer Science (Expected graduation May 2021)

- GPA: **3.9/4**
- Relevant Coursework: Machine Learning (4.0/4.0); Advanced Information Retrieval (4.0/4.0)

## SYSTEM & NETWORK PROJECTS

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### Sniffer

Department of Cyber Security, SJTU

NOV. 2017 – JAN. 2018

Advisor: **Senior Engineer Lihong Yao**, Department of Cyber Security, SJTU

- Worked on building a **Sniffer**, with aim to mainly realize the **IP reassembly function**, **filtering packets function** and **searching function** based on WinPcap Library.
- Built the GUI based on C to display all the information of the packages.
- Realized the IP reassembly function to display all the messages of an IP package with many fragments.
- Realized the filtering packets function to display the messages of the selected packages based on different rules.
- Realized the searching function to search for packages whose context contain the given string.

### Firewall based on Netfilter

Department of Cyber Security, SJTU

OCT. 2018 – DEC. 2018

Advisor: **Senior Engineer Lihong Yao**, Department of Cyber Security, SJTU

- Worked on building a **Firewall** on Linux, with aim to mainly filter different packets according to different rules, add rules, delete rules and configure rules on GUI based on Netfilter.
- Built the GUI based on Qt to display all the rules and add/delete rules.
- Realized the function of filtering the data packets based on source/destination IP address, source/destination Port, Protocol, subtypes of ICMP Protocol and times.

## RESEARCH EXPERIENCE

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### Multiple Character Embeddings for Chinese Word Segmentation

SJTU School of Cyber Security

Feb 2018-May 2018

Advisor: **Prof. Gongshen Liu**, School of Cyber Security, SJTU

- Worked on the **Multiple Character Embeddings for Chinese Word Segmentation** project, which focused on improving the performance of Chinese Word Segmentation.
- Proposed to leverage both the semantic and phonetic meanings of Chinese characters by introducing Pinyin Romanization and Wubi Input embeddings as a means to improve the performance.
- Designed a novel shared Bi-LSTMs-CRF model capable of effectively fusing multiple embeddings.
- Co-authored a paper in ACL-SRW 2019.

### HAL Detector

SJTU School of Cyber Security

Jan 2018-Jul 2018

Advisor: **Prof. Gongshen Liu**, School of Cyber Security, SJTU

- Worked on the **HAL Detector** project, which focused on improving the performance of malware detection systems
- Proposed the use the **Heterogeneous Information Network** and **meta paths** to extract the relationship between apps and APIs, formulate a graph to describe the relationship, and represent each app.
- Used a **Denoise Autoencoder** to reduce useless API information.
- Awarded **2nd Prize** at the National College Student Information Security Contest

### Molecular Communication

Coordinated Science Laboratory

Jun 2018-Sept 2018

Advisor: **Prof. Haitham Al-Hassanieh**, ECE, UIUC

- Worked on the **Molecular Communication** Project.
- Worked on analyzing the channel of molecular communication and representing it in a mathematical format.
- Conducted experiments using different modulation techniques and coding methods.
- Performed simulations to identify maximum packet length and optimal throughput and design a modulation method.

### Distributed Anomaly Detection

SJTU School of Cyber Security

Feb 2019-June 2019

*Advisor: Prof. Cunqing Hua*, School of Cyber Security, SJTU

- Worked on the Distributed Anomaly Detection Project.
- Worked on applying PCA and rPCA to anomaly detection in network.
- Designed DisRPCA algorithm and apply it to distributed anomaly detection.

### Multiple Words Expression Generation

UIUC Coordinated Science Laboratory

Dec 2019-Present

*Advisor: Prof. Pramod Viswanath*, ECE, UIUC

- Worked on the **Multiple Words Expression Generation** project, which focused on generating multiple words expression.
- Proposed to leverage a Deletion-Retrieval-Generation model to transfer original simple expression into multiple words expression.
- Designed new labels and new evaluation metrics and leverage sequence tagging model in the deletion model.

### PUBLICATION

- **Jianing Zhou\***, Jingkang Wang\*, Gongshen Liu, *Multiple Character Embeddings for Chinese Word Segmentation*, ACL-SRW 2019

### AWARDS

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| • Academic Excellence Scholarship of SJTU ( <b>Second Class: top 10%</b> )                     | 2016 |
| • <b>3rd Prize</b> in the National Physics Contest for College Students                        | 2016 |
| • Academic Excellence Scholarship of SJTU ( <b>Third Class: top 20%</b> )                      | 2017 |
| • <b>Meritorious Winner</b> in Mathematical Contest In Modeling ( <b>top 8.88%</b> )           | 2018 |
| • <b>2nd Prize</b> in National College Student Information Security Contest ( <b>top 10%</b> ) | 2018 |
| • Academic Excellence Scholarship of SJTU ( <b>Third Class: top 20%</b> )                      | 2018 |

### PROFISSIONAL SKILLS

- Programming Languages: c/c++, python, java, Matlab, php, javascript
- Hardware: Arduino, USRP
- Security Applications: NS2, NS3, IDA Pro, OllyDbg, Burpsuite, Wireshark

### STANDARDIZED TESTS

- TOEFL: Total 107 (Reading 29+Listening 29+Speaking 23+Writing 26)
- GRE: Total 325 (Verbal 155+Quantity 170+AW 4.0)