

# RUIZHI LIU

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## EDUCATION

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**Southeast University**

M.Eng in Cyberspace Security

*Sept. 2021 - Present*

GPA: 4.0/4.0

**Southeast University**

B.Eng in Cyberspace Security

*Sept. 2017 - June. 2021*

GPA: 3.71/4.0

## PUBLICATIONS

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**Ruizhi Liu**, Jinhui Li, et al. "A Wireless communication security authentication method based on received signal strength" CN Patent No.111031541. 06 Sep. 2022.

## PROJECTS

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**Malware Detection Based on System Call Sequence Analysis**

*Dec. 2021 - Present*

- Proposed an online update sequential pattern mining algorithm to identify software behaviors
- Designed a real-time malware detection system using extracted patterns

**Q&A System for Movie Based on Knowledge Graph and BERT**

*Jan. 2022 - Mar. 2022*

- Built a movie knowledge graph using Neo4j with data from Douban
- Fine-tuned BERT for movie-related natural language processing tasks
- Designed a web page to receive inquiries and provide answers by querying the knowledge graph

**Encrypted Network Traffic Analysis Based on Machine Learning**

*Dec. 2020 - Oct. 2021*

- Devised a method to extract traffic features from data packet, IP, stream, certificate and host
- Built classifiers for multiple features using SVM, Random Forest, XGBoost and Naive Bayes
- Designed a framework integrating multiple features to detect encrypted malicious traffic
- **Rank 1st** in Encrypted Traffic Analysis Problem in DataCon Network Traffic Analysis Competition

**Screenshot Text Identification System**

*Nov. 2019 - June. 2020*

- Applied a image preprocessing algorithm to segment antialiased text in screenshots
- Trained a YOLO model to detect text in screenshots
- Designed a CRNN + CTC framework for text recognition

**Link Fingerprint Authentication System in Drone Communication**

*Dec. 2018 - Nov. 2019*

- Proposed a wireless communication security authentication method based on Received Signal Strength
- Effectively detected attackers pretending to be legitimate drones communicating with the ground station

## EXPERIENCE

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**Research Assistant**, Southeast University

*Sept. 2021 - present*

*Following Professor Qingjun Xiao*

- Research on big network data mining, network behavior analysis and graph neural networks

**Internship**, Enlink Cloud

*July. 2021 - Aug. 2021*

- Investigated the technology roadmap of User and Entity Behavior Analytics (UEBA)
- Developed a prototype of UEBA system

## AWARDS AND HONORS

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**Graduate Scholarship of SEU**, Southeast University

*2021 - 2023*

**Merit Graduate Student**, Southeast University

*2022*

**Third Prize of China**, China Post-Graduate Mathematical Contest in Modeling

*2021*

**Merit Student**, Southeast University

*2018*

## SKILLS

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### **Programming Languages**

Python, Java, Matlab, C, C++

### **Tools**

Pytorch, Tensorflow, Keras, Neo4j, Wireshark, Zeek

### **Languages**

Mandarin (Native), English (TOEFL 108: R29, L30, W27, S22)