# Jingwen Shi

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## EDUCATION

**Research Interests: 4G/5G Network, Cybersecurity, Cloud Computing, AI for Distributed Systems**

- Ph.D.,Computer Science and Engineering, Michigan State University, GPA:4.0 *Aug. 2019 - May 2024*
- M.S., Computer Applied Technology, University of Chinese Academy of Sciences *Sept. 2016 - May 2019*
- B.S., Information Security, Hunan University, Graduated with Honor(Summa eq.) *Sept. 2012 - May 2016*

## EMPLOYMENT

**Research/Teaching Assistant, Michigan State University** *Sept. 2019 - May 2024*

- Study 3GPP LTE(4G)/NR(5G) standards and find vulnerabilities in RAN and IMS Core Network.
- Launch proof-of-concept attacks on operators, software-defined radio, hardware, and phone models.
- Undergoing submissions are related to IMS services (VoLTE/Vo5G, ViLTE/Vi5G). Accepted papers: 911 service[Mobicom'22, To be appeared], Mobile-assisted verification mechanism [TMC'22, Paper].

**Research Intern, Los Alamos National Lab** *June 2021 - Aug. 2021*

- Built a simulation testbed for the cyber-physical system based on automata theory and generated datasets.
- Developed a learning framework to infer the privacy of the cyber-physical system using Julia.
- Wrote the thesis and documents [Github].

**Research Intern, Alibaba** *Jan. 2019 - June 2019*

**Project1.Traffic Prediction and Uncertainty Interval Estimation for E-Commerce Clusters**

- Developed a robust Bayesian Neural Networks(BNNs) for traffic prediction in Alibaba cloud.
- Analyzed high dimensional and high volume logs on the distributed monitoring system and developed algorithms on the distributed machine learning system. Wrote one paper and one patent [JST'19, Paper].

**Project2.Anomaly Detection in Alibaba Cloud**

- Developed an efficient framework for anomaly detection of virtual machines for Alibaba Cloud clusters.
- This framework integrated multiple machine learning(e.g., Isolated Forest) and statistic(e.g., GMM) methods to reduce false alarms while detecting actual abnormal events. Wrote one patent and one technique article.

## OTHER PROJECTS

**Search Engine and Visualization, Individual** *Mar. 2016 - May 2016*

- Developed a crawler system to collect Chinese laws and news(python, sqlite3, and Scrapy). Next, developed a search engine with visualization(Django, Ajax, PageRank, and D3js). [Excellent Graduation Project]

**A Novel Verification Code Technology Based on Optical Interference, Leader** *Feb. 2016 - April 2016*

- Led a group of five people to design a new verification code, which successfully defense the Optical Character Recognition. [First prize in the Chinese National Students Innovation Training Program.]

## SKILLS

- Tools: [Wireless: srsRAN, OpenIMSCore, QXDM, Wireshark, Android]; [Cloud: Docker, MongoDB, Hbase, PostgreSQL, Spark, Hadoop, Linux, Git]; [AI: Tensorflow, Keras, Scikit-learn]; [Website: Django, D3.js, Scrapy, sqlite3]
- Languages: Python, Java, C, C++, Julia, SQL, Matlab, PHP, JavaScript, CSS, HTML
- Courses: Mobile Application Development, Cryptography & Network Security, Operating System, Big Data System, Design & Theory of Algorithms, Machine Learning, Deep Learning, Artificial Intelligence, Web Data Mining

*Additional Relevant Experience & Publications & Activities & Honors and Rewards Available on* Personal Website