# JIAYUN ZHANG

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## EDUCATION

**Fudan University** — Shanghai, China
*B.S. in Computer Science* — Graduation: Jul 2020 (Expected)

**University of Chicago** — Chicago, IL, U.S.A
*Research Intern co-advised by Prof. Ben Y. Zhao and Prof. Heather Zheng.* — Jan 2020 - Mar 2020

**Aalto University** — Espoo, Finland
*Research Intern advised by Prof. Yu Xiao.* — Jun 2019 - Sep 2019

## PUBLICATIONS

1. Shawn Shan, Emily Wenger, **Jiayun Zhang**, Huiying Li, Haitao Zheng, Ben Y. Zhao. "Fawkes: Protecting Personal Privacy against Unauthorized Deep Learning Models." Proceedings of *the* $29^{th}$ *USENIX Security Symposium (USENIX Security)*, Boston, MA, Aug. 2020.
2. **Jiayun Zhang**, Yang Chen, Qingyuan Gong, Aaron Yi Ding, Yu Xiao, Xin Wang, Pan Hui. "Understanding the Working Time of Developers in IT Companies in China and the United States." *IEEE Software. (DOI: 10.1109/MS.2020.2988022).*
3. Qingyuan Gong, **Jiayun Zhang**, Yang Chen, Qi Li, Yu Xiao, Xin Wang, Pan Hui. "Detecting Malicious Accounts in Online Developer Communities Using Deep Learning." Proceedings of *the* $28^{th}$ *ACM International Conference on Information and Knowledge Management (CIKM)*, Beijing, China, Nov. 2019.
4. Qingyuan Gong, **Jiayun Zhang**, Xin Wang, Yang Chen. "Identifying Structural Hole Spanners in Online Social Networks Using Machine Learning." Proceedings of *the ACM SIGCOMM 2019 Conference Posters and Demos*, Beijing, China, Aug. 2019.
5. Yihan Ma, Hua Sun, Yang Chen, **Jiayun Zhang**, Yang Xu, Xin Wang, Pan Hui. "DeepLoc: A Location Preference Prediction System for Online Lodging Platforms." Proceedings of *the 14th CCF Chinese Conference on Computer Supported Cooperative Work (ChineseCSCW)*, Kunming, China, Aug. 2019.
6. **Jiayun Zhang**, Qingyuan Gong, Yushan Liu, Yang Chen, Xin Wang. "Identifying Structural Hole Spanners in Online Social Networks Using Deep Learning." *In Submission.*
7. **Jiayun Zhang**, Qingyuan Gong, Yang Chen, Yu Xiao, Xin Wang, Aaron Yi Ding. "Understanding Work Rhythms in Software Development and Their Effects on Technical Performance." *In submission.*

## RESEARCH EXPERIENCE

**Security and Privacy on Deep Neural Networks** — Jan 2020 – May 2020
*co-advised by Prof. Ben Y. Zhao and Prof. Haitao Zheng, University of Chicago*

- **Defending Black-Box Adversarial Attacks on Deep Neural Networks** — Feb 2020 – May 2020
  - Collaborated in building Blacklight, a detection and mitigation system for black-box adversarial attacks using probabilistic fingerprints.
- **Protecting Personal Privacy against Unauthorized Deep Learning Models** Jan 2020 – Feb 2020
  - Collaborated in building Fawkes, a system that allow individuals to inoculate themselves against unauthorized facial recognition models by adding imperceptible pixel-level changes to their photos.
  - Contributed to a paper accepted by **USENIX Security'20**.

**User Behavior Analysis in Online Social Networks** — May 2018 – May 2020
*advised by Prof. Yang Chen, Fudan University*

- **Identifying Structural Hole Spanners in Online Social Networks** — Mar 2019 – May 2020
  - Proposed a deep learning-based model for identifying structural hole spanners with TextCNN and GBDT2NN; leveraged the cross-site linking function to enhance the identification; achieved a test AUC value of 0.854 on the Foursquare and Twitter datasets.

- Contributed to a paper published in **SIGCOMM Posters and Demos'19**.

◦ **Malicious User Identification in Version Control Systems** Jun 2018 – Jun 2019

- Collected a user-centric dataset including the information of over 10 million GitHub Users. [code][dataset]
- Proposed GitSec, a deep learning-based system with Phased LSTM and attention mechanism to detect malicious accounts on VCS; achieved a test AUC value of 0.938 on the GitHub dataset.
- Contributed to a paper published in **CIKM'19**.

◦ **Discovering Work Patterns of Developers** Jan 2019 – Sep 2019

- Performed clustering analysis on commit behaviors to identify representative work rhythms of developers.
- Analyzed the relationship between work rhythms and demographics, collaboration role and productivity.
- Conducted a user survey to understand the situation of working overtime from developers' perspectives.
- Contributed to a first-authored paper accepted by **IEEE Software**.

**A Video and Sensor Dataset of a Wooden Box Assembly Process** Jun 2019 – Sep 2019
*advised by Prof. Yu Xiao, Aalto University*

- Acquired video and sensor data of the wooden box assembly process with multiple cameras and a sensor glove; performed data labeling, processing and analysis.

**Data Mining on Health-Seeking Behavior** May 2017 – Apr 2018
*advised by Prof. Yun Xiong, Fudan University*

- Devised a model with SVM for pneumonia detection based on medication records. A test accuracy of 0.915 was obtained on a real-world dataset collected from hospitals in Shanghai.
- Devised a prediction model with Time-Aware LSTM to predict one's stage of diabetes based on previous diagnoses. Achieved a test F1-Score of 0.787 on the real-world dataset.
- Developed a web-based interactive system for diabetes prediction.

## INDUSTRIAL EXPERIENCE

**VMware Information Technology (China) Co., Ltd.** Shanghai, China
*MTS (Member of Technical Staff) Intern* Apr 2018 – Oct 2018

- Developed a log analysis system for automatically detecting the causes of program failures. 67 types of error causes was detected with an accuracy of 0.936 on real-time data from an internal bug reporting platform.
- Developed web APIs for an internal cloud resource platform to support the use of virtual machine templates.
- Participated in the implementation of Template Validation Service, a system for security verification of virtual machine templates uploaded to database.

## SELECTED AWARDS

**2020** Chun-Tsung Scholar (Research Endowment Funded by Nobel Laureate Dr. Tsung-Dao Lee)
**2019** The First Prize of Shanghai Open Data Innovation Research Competition (Top 1 among 65 teams)
**2019** Best Student Award, Mobile Systems and Networking Group at Fudan University (1 out of 32)
**2019** Second Class Scholarship for Outstanding Students in Fudan University (Top 10%)
**2018** Xiyuan Scholar (Undergraduate Research Program at Fudan University)

## SKILLS

**Programming**: Python, C/C++, Ruby, C#, HTML/CSS, JavaScript, SQL.
**Packages and Tools**: Pytorch, Tensorflow, Scikit-learn, Matlab, Django, Bootstrap, Unity, Blender etc.
**Standard Language Tests**: TOEFL 104 (Reading 28, Listening 24, Speaking 24, Writing 28)