

# Zhen Zhang

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## EDUCATION

**Johns Hopkins University — Whiting School of Engineering, Baltimore, MD**

*Ph.D. student in Computer Science*

*Sep. 2018 – .*

GPA: 4.00 / 4.00

**Lehigh University — P.C. Rossin College of Engineering & Applied Science, Bethlehem, PA**

*Ph.D. student in Computer Science*

*Aug. 2016 – Jul. 2018*

GPA: 3.97 / 4.00

**Zhejiang University of Technology, Hangzhou, China**

*B.E. in Software Engineering*

*Sep. 2011 – Jul. 2015*

GPA: 3.86 / 4.00

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## RESEARCH PROJECTS

### Correlating Description and Permission with Transfer Learning

*Guide: Dr. Yinzhi Cao*

*May. 2018 – Jun. 2019*

- Goal: Matching applications' description to permissions for potential over-privilege detection
- Applied Neural Network models include DAN, CNNs, word-embeddings and LSTMs
- Applied novel domain selection algorithms, which is an important for performance boosting
- Applied Transfer Learning techniques and achieved around 82% matching precision on average (improved around 8% comparing to training from scratch)
- Created sentence-to-permission data-sets for Android, IFTTT and Chrome Extension platforms

### Embedding Word Relationship

*Guide: Dr. Sihong Xie*

*Sep. 2017 – Mar. 2018*

- Goal: Predicting suitable modifiers for products on E-commerce websites
- Proposed encoding word relationship, modification, into Word-Embeddings space
- Proposed new loss function for word embedding training to encode modification relationship in sentences
- Proposed Negative Sampling idea for word-embedding training to improve result quality

### Towards a Secure Zero-rating Framework with Three Parties

*Guide: Dr. Yinzhi Cao*

*Jan. 2017 – May. 2018*

- Goal: Preventing zero-rating attacks
  - Implemented proxy-based attack module to attack existing zero-rating system
  - Implemented anti-IP-whitelist attack to attack theoretical IP based defense
  - Implemented network packet parsing, packet integrity and authenticity checking, and packet control modules at control plane of Software-Defined Networking (SDN)
  - Given a presentation at USENIX Security 2018
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## WORK EXPERIENCE

**State Street, Hangzhou, China**

*Software Engineer*

*Aug. 2015 – Jan. 2016*

- Integrated [Cloakware](#) into Intranet OAuth. System.
- Developed a Services Monitoring System based on open-source [Watchmen](#) (P.O.C. project)
- Deployed Message Queue system with [ActiveMQ](#)
- Combined Message Queue with Authentication System. (P.O.C project)

**LogisLand, Hangzhou, China**

*Software Engineer Intern*

*Jul. 2014 – Oct. 2014*

- Implemented a web spider to collect trading data using Python
  - Implemented the data pulling module of the trading system using C++
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## SKILLS & OTHERS

**Machine Learning:** Linear Regression, Neural Networks, Word Embeddings model, Adversarial Learning, Kernel Method, Transfer Learning

**Programming Languages:** proficient in Python, Java. Experienced with C++, Javascript, Matlab

**Frameworks:** Numpy, Pytorch, Tensorflow, sklearn

**Interests:** computer games, assemble/dismantle electronic devices, learning mathematical concepts

**Teaching Assistant:** CS601.220 Intermediate Programming

**Open Courses:** [Computational Investing, Part I\(2013\)](#), [The Data Scientist's Toolbox\(2014\)](#)