Linlin Chen

lchen96@hawk.iit.edu
(312) 536-0627
Illinois Institute of Technology
10 West 31st ST, Chicago, IL 60616
https://llgeek.github.io

Education

2015–present **Illinois Institute of Technology**
Ph.D Candidate in Computer Science
GPA: 4.0/4.0
Adviser: Prof. Xiang-Yang Li & Prof. Peng-Jun Wan

2011–2015 **University of Science and Technology of China**
B.E. in Computer Science
Thesis: *Learning Entity and Relation Embedding for Knowledge Graph and Synonymous Relation Inferring*

Research Interests

Data Privacy & Security, Deep Learning, Machine Learning, Mobile Computing, Computer Vision

Professional Skills

- Programming: C/C++, Java, Python, SQL, MATALAB, R, Scala, Bash, Lua, HTML, JavaScript, CSS
- Deep Learning Framework: Tensorflow, PyTorch, Torch, Caffe, Keras
- Big Data Processing: Hadoop, Spark, MapReduce, HBase, Hive, AWS

Selected Projects

Enable Mobile Deep Learning Training with Data Privacy **May. 2016–Jul. 2016**

- Proposed a crowd-learning protocol for deep learning training over multiple mobile devices, with training data maintained within data owners mobile devices without any privacy compromise throughout the whole training process.
- Implemented the prototype with Torch, proved its efficiency and demonstrated its privacy protection in our testbed.

Fingerprint Mobile Devices using Camera Sensor Imperfections **May. 2017 - Dec. 2017**

- Applied deep learning to uniquely track and identify mobile phones simply with very few photos taken by that device.
- Utilized camera sensor imperfections, which is robust to attacks like compression, spatial transformation, cropping, *etc.*
- Proposed a novel DNN model, exploiting the experience from object detection, face recognition and adversarial samples.

Accountable Protocols for Big Data Trading **Feb. 2016–May. 2016**

- ➢ Proposed accountable protocols for big data trading among dishonest consumers to detect trading-related misbehaviors (tax evasion, denial of purchase, resale of others datasets, etc.), covering text, image, video, table and graph data types.
- ➢ Achieved rigorous accountability (fairness & completeness), big data processing performance and high quality of service.

Big Data Trading Platform **Feb. 2015–Dec. 2015**

- ➢ Built a big data trading platform with fine-grained access control (row, column, user-specific) from scratch in 8 servers.
- ➢ Developed and configured backend with Hadoop, Hbase, SQL database and wrote frontend with HTML, CSS, JavaScript.

De-anonymizing Social Networks with Knowledge Graph **Jun. 2015–Jul. 2015**

- ➢ Leveraged knowledge graph to explicitly express arbitrary prior knowledge of the attacker for any individual user.
- ➢ Introduced BFS and LHS for fast graph matching, and efficiently de-anonymized targeted user identities and privacy attributes.

Graph-based Privacy Preserving Data Publishing **Mar. 2015–Jun. 2015**

- ➢ Proposed a graph-based framework for data publishing, which accommodates most state-of-art privacy protection approaches.
- ➢ Coordinated modules like publishing data representation, adversary capability modeling, privacy and utility quantification, and universal partitioning algorithms for data anonymization, all simply with the aid of the graph concepts.

Experience

Teaching Assistant, *Illinois Institute of Technology*

- **Graduate level courses:**
  - ➢ CS535: Design & Analysis of Algorithms **Fall 2017**
  - ➢ CS536: Science of Programming **Spring 2017**
  - ➢ CS535: Design & Analysis of Algorithms **Fall 2016**
- **Graduate & undergraduate level course:**
  - ➢ CS430: Introduction to Algorithms **Spring 2018**

Research Assistant, *Illinois Institute of Technology* **Aug. 2015–present**

- ➢ Wireless Networking Lab
- ➢ Adviser: Prof. Xiang-Yang Li & Prof. Peng-Jun Wan
- ➢ Privacy preserving data publishing, privacy preserving mobile deep learning, image deep mining, data trading, etc.

Research Intern, *ICT, Chinese Academy of Sciences* **Mar. 2015–Jun. 2015**

- ➢ Research Center of Web Data Science & Engineering
- ➢ Conducted researches related to entity and relation embedding and predications in knowledge graph.
- ➢ Proposed a novel embedding method, and achieved remarkable efficiency in new entity and synonymous relation prediction.

Research Assistant, *University of Science and Technology of China* **Sept. 2013–Dec. 2014**

- ➢ Nature Inspired Computation and Applications Lab
- ➢ Fault diagnosis in the model space for automatic system.

Research Assistant, *University of Science and Technology of China* **Sept. 2012–Aug. 2013**

- ➢ Multi-Agent System Lab

➢ Implemented gesture recognition, fall detection and stranger recognition in the domestic robot.

Publications

1. *AccountTrade: Accountable Protocols for Big Data Trading Against Dishonest Consumers*, Taeho Jung, Xiang-Yang Li, Wenchao Huang, Jianwei Qian, **Linlin Chen**, Junze Han, Jiahui Hou, Cheng Su, IEEE INFOCOM, 2017
2. *Social Network De-Anonymization and Privacy Inference with Knowledge Graph Model*, Jianwei Qian, Xiang-Yang Li, Chunghong Zhang, **Linlin Chen**, Taeho Jung, Junze Han, IEEE Transactions on Dependable and Secure Computing (TDSC), 2017
3. *Graph-Based Privacy-Preserving Data Publication*, Xiang-Yang Li, Chunhong Zhang, Taeho Jung, Jianwei Qian, **Linlin Chen**, IEEE INFOCOM, 2016
4. *De-anonymizing social networks and inferring private attributes using knowledge graphs*, Jianwei Qian, Xiang-Yang Li, Chunhong Zhang, **Linlin Chen**, IEEE INFOCOM, 2016
5. *VoiceMask: Anonymize and Sanitize Voice Input on Mobile Devices*, Jianwei Qian, Haohua Du, Jiahui Hou, **Linlin Chen**, Taeho Jung, Xiang-Yang Li, Yu Wang, Yanbo Deng, arXiv 2017

Award

- Student Travel Grant, ACM MobiHoc **2015**
- Outstanding Student Scholarship (Grade 2) of USTC **Oct. 2014**
- Ministry of Education's Reward for the Undergraduate Projects of Innovation **May. 2014**
- Outstanding Volunteer Award **May. 2012**
- Outstanding Student Scholarship (Grade 2) of USTC **Oct. 2011**
- Outstanding Graduate Award (Grade 1) **Nov. 2011**

Professional Activities

Conference Reviewer of:

- CBD **2017**
- BigCom **2016 & 2017**
- IPCCC **2016**
- NIPS **2016**
- MSN **2016**