Xinyi (Cindy) CHEN

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EDUCATION

Research interests: Database, distributed system, computer network

Shanghai Jiao Tong University (SJTU) **Sept.2015 – Jun.2019 (expected)**

Zhiyuan Honor Track (89/~2500, selected students as honored program)

B.S. in Computer Science *Shanghai, China*

- Overall GPA: 3.78/4.0 (88.77/100) Third-year GPA: 3.86/4.0 (90.45/100)
- Research Assistant at Data Communication and Engineering (DCE) Laboratory advised by Professor Xiaofeng Gao

University of Pennsylvania (UPenn) **Jul.2018 – Sept.2018**

Summer Internship, Department of CIS *Philadelphia, United States*

- Research Assistant at Distributed System Laboratory advised by Professor Boon Thau Loo and Professor Susan B.Davidson

GRE: Verbal – 154 Quantitative -170 Analytical Writing -3.5

TOEFL: 101 (Listening 28, Reading 26, Speaking 23, Writing 24)

PUBLICATIONS

[1] Yin Lin, **Xinyi Chen**, Xiaofeng Gao, Bin Yao, Guihai Chen, "R2 -Tree: An Efficient Indexing Scheme for Server-Centric Data Center Networks", accepted by *International Conference on Database and Expert Systems Applications (DEXA)*, 2018

RESEARCH EXPERIENCE

Data Provenance for Probabilistic Programming **UPenn**

Advisors: Prof. Boon Thau Loo and Prof. Susan B.Davidson **Jul.2018 – Present**

- Designd a unified language called P3log (based on Datalog) which can capture different probabilistic programming language models in distributed system and machine learning.
- Supported provenance in system and proposed several novel provenance queries, for example, identifying the most influential tuples.
- Developed a prototype of P3log and the evaluation shows P3log can maintain provenance trees with low overhead.

Reinforcement Learning for Dynamic Routing in DCN **SJTU**

Advisor: Prof. Xiaofeng Gao **Nov.2017-Jun.2018**

- Proposed data-driven routing prediction model using reinforcement learning and took advantages of centralized SDN (software defined network) controller to implement it.
- Designed and implemented this dynamic routing approach in Fat-tree data center network on emulated Mininet testbed. It performs well in balancing the flow and avoid traffic

congestions comparing with traditional flow scheduling schemes such as ECMP.

Indexing Scheme for Data Center Network (DCN) SJTU

Advisor: Prof. Xiaofeng Gao **Mar.2017- Nov.2017**

- Extracted a general pattern vector through analyzing the feature of sever-centric data center networks.
- Based on the general pattern vector, designed a novel layered indexing scheme called R2-Tree which reduce the query scale by hierarchy.
- The performance for three typical server-centric data center networks: DCell , Ficonn, HCN are evaluated on Amazon's EC2 platform and the technical advancement of R2-Tree is proven comparing to the former research: RT-HCN in this topic.

SELECTED COURSE PROJECTS

Data Mining

- Optimized the models of XGBoost, combined the prediction between several models and improved the accuracy for document classification task. Ranked first in Kaggle competition.
- Proposed a novel algorithm inspired by Deepwalk to solve link prediction problem in knowledge map. Ranked Third in Kaggle competition.

Machine Learning

- Applied the idea of Rival Penalized Competitive Learning (RPCL) to k-mean and made the number of clusters be automatically determined.
- Tried several models to do image classification on noised data, from the basic CNN to Autoencoder (AE), to recent Capsule Net. Improved the accuracy from 88.03% to 98.17%.

HONORS & AWARDS

Zhiyuan Honors Scholarship (top 5%)	2016, 2017
Tung OOCL Scholarship (top 5%)	2016
Scholarship of Academic Excellence (top 10%)	2016, 2017
National Mathematical Contest in Modeling in Shanghai District (top 20%)	2017
Zhiyuan Overseas Summer Research Scholarship (top 5%)	2018

SKILLS

C/C++, Python, Java, MATLAB, SQL, Latex

PERSONAL INTERESTS

- Music: I play piano. I love operas and dances, especially Tchaikovsky's work. Now I am learning composing. It is challenging and interesting.
- Painting: I love impressionist oil painting so I go to art exhibition a lot.