WANDA LI

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EDUCATION

Tsinghua University
M.Eng in Data Science and Information Technology — Sep 2020 - Present

Fudan University
B.S. in Computer Science (with honors) — Sep 2016 - Jun 2020

PUBLICATIONS

1. Anping Zhang*, Ke Zhang*, **Wanda Li**, Yue Wang, Yang Li, Lin Zhang. "Optimising Self-Organised Volunteer Efforts in Response to the COVID-19 Pandemic." *Humanities and Social Sciences Communications, 2022.*
2. **Wanda Li**, Zhiwei Xu, Yi Sun, Qingyuan Gong, Yang Chen, Aaron Yi Ding, Xin Wang, Pan Hui. "DeepPick: A Deep Learning Approach to Unveil Outstanding Users with Public Attainable Features." *IEEE Transactions on Knowledge and Data Engineering (TKDE), 2021.*
3. **Wanda Li**, Jianping Zeng. "Leet Usage and Its Effect on Password Security." *IEEE Transactions on Information Forensics and Security (TIFS), 2021.*
4. Yuxuan Xiu, **Wanda Li**, Wai Kin Victor Chan. "OD-HyperNet: A Data-Driven Hyper-Network Model for Origin-Destination Matrices Completion Using Partially Observed Data." *Proceedings of the 10th International Conference on Logistics, Informatics and Service Sciences (LISS), 2020.*

RESEARCH EXPERIENCE

Stage-Adaptive Multi-Task Recommendation System — Penn State University
Advisor: Prof. Suhang Wang (Assistant Professor, Information Science) — Jun. 2022 - Aug. 2022

- Designed and implemented a user-stage adaptive recommendation system, STAN, to enhance the accuracy of the recommendation system.
- Designed a model containing a multi-task recommendation part and a stage representation part.
- Tested the model's performance on a WeChat-Video public dataset and a Shopee industrial dataset.
- Achieved up to 10.85%/18.47% improvement compared to SODA on AUC/NDCG score, respectively.

Human Self-Organization Modeling — Tsinghua University
Advisors: Prof. Lin Zhang and Assist. Prof. Yang Li — Sep. 2020 - Dec. 2020

- Proposed a data-driven framework to investigate when and how self-organisation emerged during the pandemic and how it related to the effectiveness of volunteer organisations in general.
- Designed an entropy-based measurement algorithm for people's self-organization level.
- Found that volunteers' task participation and social task preferences had multiple phases of self-organisation in response to changing pandemic situations and centralised interventions.

Estimation of Population Movement between Cities — Tsinghua University
Advisor: Prof. Wai Kin Victor Chan (Professor, Co-Associate Director) — Dec. 2019 - Feb. 2020

- Proposed hyper-network origin-destination matrices algorithm to model population fluctuation during COVID-19.
- Collected the partially observed travelling data from the Baidu Migration dataset.
- Integrated the data with optimized methods and built an efficient and precise model.

Unveil Outstanding Users with Limited Features — Fudan University
Advisor: Prof. Yang Chen (Associate Professor, Computer Science) — Dec. 2018 - May. 2019

- Defined the concept of Outstanding Users.
- Proposed a framework, DeepPick, to detect outstanding users in an online social network without the complete information of network structure.
- Introduced deep neural networks to capture dynamic features of the users for generalization; leveraged the traditional descriptive features to utilize users' public information for specialization; trained the framework on two public datasets: Yelp and Foursquare.

- Achieved up to 35.3% F1-score and 22.5% AUC compared to existing approaches.

Usage and Effect of Leet Words in Password Fudan University
Advisor: Prof. Jianping Zeng (Associate Professor, Computer Science) Jan. 2018 - Jun. 2018

- Designed methods to explain the Leets in passwords by definition, detection, dictionary construction, and usage.
- Extracted the most prevalent counterpart pairs of Leets; examined the effect of Leet in passwords by incorporating Leet transformation into the Probabilistic Context-Free Grammar method to crack passwords.
- Constructed the first comprehensively analyzed dictionary of Leets for passwords and conducted user surveys to prove our experiment results.
- Discovered the effect of Leet transformations in password security: common Leets can enhance password cracking performance, while low-frequency Leets could help users to strengthen their passwords.

SELECTED AWARDS AND HONORS

2022 Shopee Code League 2022 ranked top 4% (Top 106 among 2,393 teams)
2020 The First Prize of Shanghai Open Data Application (SODA) Competition (Top 3 among 198 teams)
2020 Outstanding Graduate of Fudan University
2020 Chun-Tsung Scholar (Research Program Funded by Nobel Laureate Dr. Tsung-Dao Lee)
2019 & 2018 Second Class Scholarship for Outstanding Students in Fudan University (Top 10%)
2018 National Second Prize, China Undergraduate Mathematical Contest in Modeling
2017 The Most Popular Team, Google Girl Hackthon Season III

TEACHING AND SERVICE

Teaching Assistant: Learning from Data Tsinghua University
Instructional Aide Fall 2022

- Hold office hours weekly for a 120-student course on the main information track of Tsinghua University.
- Design and grade programming assignments on specific topics such as support vector machine (SVM) and neural networks.
- Give recitations and hold discussions on data science topics.

INDUSTRIAL EXPERIENCE

Alibaba Group. Beijing, China
Recommendation System Research Intern. Jul. 2021 - Dec. 2021

- Designed and implemented a multimodal representation model to enhance the item embedding by tag taxonomy in the recommendation system.
- Built a model based on BERT structure to understand different modalities of items, including image and text; updated the model via the active learning method with Alibaba's internal dataset.

Kuaishou Technology. Shenzhen, China
Machine Learning Engineer Intern. Apr. 2021 – Jun. 2021

- Designed and implemented machine learning models using TensorFlow to detect impostors and malicious users on the Kuaishou Application.
- Improved detection accuracy of the multimodal model with Kuaishou's internal dataset about users' video style and other user-generated content styles; enhanced the AUC of detection to more than 90%.

Microsoft. Shanghai, China
Customer Service and Support(CSS) Security Intern. Jan. 2019 - Mar. 2019

- Built a highly reusable power BI internal analysis project and set up different test environments to accomplish lab works.
- Set up virtual environments through Docker.

SKILLS

Programming: Python(Proficient), C/C++(Proficient), Matlab(Basic), SQL(Basic), Hive(Basic), Java(Basic), NetLogo(Basic).
Standard Language Tests: TOEFL 105