Yuwei Zhang

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EDUCATION

University of Cambridge **Cambridge, UK**

MPhil in Advanced Computer Science *2022 – 2023 (expected)*

- Ongoing research project: "Exploring Uncertainty Quantification in Federated Learning for Trustworthy Healthcare Applications", supervised by *Prof. Cecilia Mascolo*
- Funded by Chiang Chen Overseas Fellowship

Fudan University **Shanghai, China**

BSc in Computer Science *2018 – 2022*

- Graduated with distinction (Major GPA: **3.9/4.0**, School Rank:**2/153)**
- Selected awards: 2021: Shanghai Scholarship (Top 1%); 2020 and 2019: Chinese National Scholarship (Top 1%); 2018: Freshman Admission Scholarship of Tengfei College (Top 2%)

PUBLICATIONS

(# denotes equal contributions)

1. Structural Hole Theory in Social Network Analysis: A Review.
   Zihang Lin#, **Yuwei Zhang#**, Qingyuan Gong, Yang Chen, Atte Oksanen, Aaron Yi Ding.
   IEEE Transactions on Computational Social Systems (TCSS), 2022, 9(3):724-739.
2. A Human Mobility Dataset Collected via LBSLab.
   Yuwei Zhang, Qingyuan Gong, Yang Chen, Yu Xiao, Xin Wang, Pan Hui, and Xiaoming Fu.
   Under review: *Data in Brief*.

RESEARCH EXPERIENCE

Agile Innovation Governance in COVID-19 Pandemic **Shanghai Artificial Intelligence Laboratory**

Advisor: Dr. Jingjing Qu *Mar. 2022 – Sep.2022*

- Surveyed digital contact tracing applications and policies in 50 countries over the globe; identified central issues of discussion from social media data (from 11 countries) using LDA topic models
- Analyzed the effectiveness of Agile Innovation Governance using regression discontinuity design (RDD)
- Performed social network analysis on user interaction graphs using structural hole theory and uncovered heterogeneous effect of different stakeholders in the interaction (paper in preparation)

Sensing Human Mobility Patterns in Big Cities Using Smart Card Data **University of Göttingen**

Advisor: Prof. Xiaoming Fu and Prof. Yang Chen *Aug. 2021 – present*

- Proposed a metro mobility network, analyzed network metrics and node centrality measures to investigate the city development patterns of Shanghai, London and Singapore
- Conducted community detection to understand different types of metro stations and surrounding urban areas, generating insights relating to urban developing theories
- Proposed a method for special event detection using the importance score distribution of metro stations in the network (paper in preparation)

Data Analysis of LBSLab, a Mobile-centric Data Collection Platform **Fudan University**

Advisor: Prof. Yang Chen *Jan. 2021 – Aug. 2021*

- Performed analysis on the mobile check-in data of 467 students collected by LBSLab, a WeChat mini-program that has attracted more than 2,000 users and gathers users' heterogeneous activity data
- Analyzed the spatial and temporal patterns of the user behaviors along with influence on users' moods, with visualizations using MATLAB
- Contributed to a first-author paper, under review by *Data in Brief*

Reviewing Structural Hole Theory in Social Network Analysis **Fudan University**

Advisor: Prof. Yang Chen *Jan. 2020 – Mar.2021*

- Provided a comprehensive review of the development of structural hole (SH) theory, SH spanner detection algorithms and SH-related applications in diverse fields
- Identified potential research trends, giving insights for facilitating researchers and service providers to better apply the theory
- Contributed to a co-first author paper published by *IEEE Transactions on Computational Social Systems*

Mobile Application Usage Analysis and Prediction **Fudan University**

Advisor: Prof. Yang Chen *Nov. 2019 – Dec.2020*

- Constructed an app usage graph to understand the co-occurrence of apps in users' app usage records, considering time and location
- Trained an LSTM-based personalized model for next app prediction, increasing F1-score from 0.85 to 0.94
- Applied GCN to generate embeddings for the mobile apps and incorporated the app embedding as a global pattern into the prediction model to resolve data sparsity and cold-start problems

PROJECT EXPERIENCE

User Perception of Data Privacy Concerns in Personalized Recommender Systems *Oct. – Nov. 2022*

- Designed and conducted semi-structured interviews with 21 participants to understand their perceptions of data privacy concerns and the impact on their usage
- Built low-fidelity prototypes to understand users' preference for explanations in the interfaces
- Revealed that users have insufficient understandings of data collection and clearer explanations are desired to increase their trust to the systems

Food Recipes Classifier and Random Generator, NLP Course Project *Oct. 2020 – Jan. 2021*

- Performed data preprocessing, regular expressions to extract ingredients, and conducted data distribution analysis and visualization
- Built classifiers to predict cuisine and courses of a recipe, using features from Bag of Words, TF-IDF and word2vec embeddings, achieving a 0.735 F1-score for a multi-class classification task with 22 classes
- Fine-tuned a GPT-2 model to train a random food recipes generator

WORK EXPERIENCE

Software Engineer Intern, Unity *Mar. 2022 – Sep.2022*

- Wrote code for PlasticHub in Go language, collaborated with a developing team of 20, and got familiar with industry developing tools like Git, Docker, and Postman
- Improved user experience by identifying inconsistencies and product flaws; proposed solutions to improve workflow
- Designed test cases to evaluate the program and wrote product description pages for users

LEADERSHIP EXPERIENCE

Student Union, School of Computer Science **Fudan University**

Director of Video Department *Sep. 2019 – Jan.2020*

- Produced a 4-minute film, which got 189,000 views online and was rated as excellent by Fudan University, coordinating a team of 15 students
- Planned and organized a two-week music and film event with 100+ active participants
- Contributed to the organization of large shows and concerts with 400+ attendees; supervised volunteer photographers and videographers

SKILLS

- **Computer Skills**: Python, C/C++, MATLAB, Java, Go, JavaScript, HTML, CSS, Final Cut Pro, Photoshop, Axure, Office
- **Languages**: Chinese (native), English (fluent) (**TOEFL iBT**: 111)
- **Interests**: Photography, vlogging, volunteering, baking