Yuwei Zhang

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EDUCATION

School of Computer Science, Fudan University **Shanghai, China**

Bachelor of Computer Science, Jul. 2022(expected)

- Cumulative GPA: 3.84/4.0 (In-Major: **3.93/4.0**), School Rank:**2/153**

PUBLICATION

(# denotes Co-First author)

- Structural Hole Theory in Social Network Analysis: A Review.
  Zihang Lin#, **Yuwei Zhang#**, Qingyuan Gong, Yang Chen, Atte Oksanen, Aaron Yi Ding.
  To appear: IEEE Transactions on Computational Social Systems (TCSS).
- A Human Mobility Dataset Collected via LBSLab. (under review)
  Yuwei Zhang, Qingyuan Gong, Yang Chen, Yu Xiao, Xin Wang, Pan Hui, and Xiaoming Fu.
  Submitted to: *Scientific Data* (Nature Publishing Group).

RESEARCH EXPERIENCE

Mining Mobility Patterns using Shanghai Smart Card Data **University of Göttingen**

Advisor: Prof. Xiaoming Fu *Jun. 2021 – Present*

- Using mobility data (over 5 million records per day in Apr. 2015 and Mar. 2016) to cluster metro stations into 3 groups and analyzing their features such as POIs
- Analyzing different mobility patterns in Shanghai Metro (weekday v.s. weekend, commuter v.s. tourist, etc), detecting and explaining anomalies to monitor special events
- Adopting network analysis methods to examine mobility network between metro stations, aiming to provide insights for urban planning of Shanghai

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

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

- 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 and their influence on users' mood, with visualizations using MATLAB
- Constructed a paper submitted to *Scientific Data* (Nature Publishing Group)

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

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

- Provided a comprehensive review on the development of structural hole (SH) theory, SH spanner detection algorithms and SH-related applications in diverse fields
- Identified potential research trends in the area, with insights for facilitating researchers and service providers to better apply the theory
- Contributed to a paper accepted by ***IEEE TCSS*** (Co-First author)

Mobile Application Usage Analysis and Prediction **Fudan University**
Advisor: Prof. Yang Chen *Mar. 2020 – Present*

- 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 app prediction problem and increased 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

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

- Performed data preprocessing using Python and regular expressions to extract ingredients, conducted data distribution analysis and visualized using Python
- Built LR classifiers to predict cuisine and courses of a recipe, using features ranging 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

Music Genre Converter, Google Software Product Sprint *Jul. 2020 - Aug. 2020*

- Collaborated with a team of peers to design and implement a web application using JavaScript, HTML, and CSS
- Understood and implemented state-of-the-art GAN-based ML models in Python and deployed it at the back-end serving to the web application on which visitors can smoothly convert a music piece into a selected new genre

INDUSTRIAL EXPERIENCE

Unity **Shanghai, China**
Software Engineer Intern *Mar. 2021 – Sep.2021*

- Wrote code for PlasticHub in Go language, collaborated with a large team, and familiar with industry developing tools like Git, Docker, and postman
- Improved user experience by identifying inconsistency and flaws of the product and proposing solutions to improve the workflow
- Designed test cases to comprehensively evaluate our program and wrote product description pages to introduce and promote our product

SELECTED AWARDS

- Shanghai Scholarship (**Top 1%**) 2021
- Chinese National Scholarship (**Top 1%**) 2020
- Chinese National Scholarship (**Top 1%**) 2019
- Freshman Admission Scholarship of Tengfei College, Fudan University (**Top 2%**) 2018

SKILLS

- **Programming languages**: Python, Java, MATLAB, C/C++, Go, JavaScript, HTML, CSS
- **Spoken languages**: Chinese-Native, English-Fluent (**TOEFL iBT**: 111, **GRE**: 332)
- **Other skills**: photography, Final Cut Pro, Photoshop, Axure, Office