Qinge Xie

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EDUCATION

Master **Expected Jun. 2020**
The School of Computer Science, Fudan University, China
Advisor: Prof. Yang Chen

Bachelor of Engineering **Sep. 2013 - Jun. 2017**
College of Computer Science & Technology, Zhejiang University of Technology, China
GPA (overall): 88.55/100 Comprehensive Rank: 1/27

PUBLICATIONS

Xie Rong, Yang Chen, **Qinge Xie**, Yu Xiao, and Xin Wang. "*We know your preferences in new cities: Mining and modeling the behavior of travelers.*" **IEEE Communications Magazine, 2018. (Accept)** [paper]

Gong Qingyuan, Xinlei He, **Qinge Xie**, Shihan Lin, Guozhen She, Ruiyu Fang, Rui Han et al. "*LBSLab: A User Data Collection System in Mobile Environments.*" **MHC workshop, ACM Ubicomp 2018. (Accept)** [paper]

Lin, Shihan, Rong Xie, **Qinge Xie**, Hao Zhao, and Yang Chen. *"Understanding user activity patterns of the swarm app: A data-driven study."* **AppLens workshop, ACM Ubicomp 2017. (Accept)** [paper]

Qinge Xie, Qingyuan Gong, Xinlei He, Yang Chen, Xin Wang, Haitao Zheng and Ben Y. Zhao. *"Trimming Mobile Applications for Bandwidth-Challenged Networks in Developing Regions."* **IEEE Transactions on Mobile Computing. (Under Major Revision)** [paper]

Qinge Xie, Tiancheng Guo, Yang Chen, Yu Xiao, Xin Wang and Ben Y. Zhao. *"Ḧow do urban incidents affect traffic speed?" A Deep Graph Convolutional Network for Incident-driven Traffic Speed Prediction.¨* **ACM CIKM 2020. (Under Review)** [paper]

RESEARCH EXPERIENCE

SAND Lab, The University of Chicago | Research Intern **Jul. 2019 - Sept. 2019**
Supervised by Prof. Ben Y. Zhao and Prof. Heather Zheng

- Adversarial Attack on Graph Data of Real Scenes
  - Proposed a black-box system design of adversarial attack on graph data of real scenes (node classification task).
  - Built an attack model based on Graph Convolutional Network model and implemented a similarity-based attack method. Implemented **large-scale training (node sampling)** on large-scale graph, e.g., Reddit dataset.

Mobile Cloud Computing Group, Aalto University | Intern **Sept. 2018 - Dec. 2018**
Supervised by Prof. Yu Xiao

- Image Based Renovation Progress Estimation
  - Built a Visual Geometry Group(VGG) based deep learning model for predicting the renovation progress of kitchen images (multiple classification). Achieved a **0.435 test Top1-accuracy** and a **0.85 test Top2 accuracy** on kitchen dataset.
  - Built a VGG based deep learning model to evaluate the quality of renovation (binary classification). Achieved a test **0.91 accuracy** on kitchen dataset.
  - Implemented an **occlusion sensitivity method** to detect the key areas in images that affect the prediction results.

Mobile Systems and Networking Group, Fudan University **Oct. 2016 - present**
Supervised by Prof. Yang Chen

- Incident-driven Real-time Traffic Speed Prediction
  - Collected multi-sources urban traffic data of San Francisco and New York City and performed data processing and analysis.
  - Proposed an urban critical incident discover method and designed a binary classifier to extract the **latent impact features** of traffic incidents for improving speed prediction.

Achieved a **0.82 test F1-score** of SFO and a **0.80 test F1-score** of NYC.
- Proposed a **Deep Graph Convolutional Network** to effectively incorporate incident, spatio-temporal, periodic and context features for traffic speed prediction. Achieved a **0.82 test F1-score** of SFO and a **0.80 test F1-score** of NYC. Achieved a **11.02% Mean Absolute Percentage Error(MAPE)** of SFO and **17.21% MAPE** of NYC.
- Contributed to a **first-authored** paper submitted to ACM UbiComp 2020.

• Trimming Mobile Applications for Bandwidth-Challenged Networks
- Implemented a WeChat mini-program with identical functionality as an existing Android app to understand sources of app size discrepancy. Performed a empirical analysis of 200 mini-programs and their Android counterparts.
- Crawled and **decompiled** 3200 Android apps. Performed detailed analysis and confirmed linked libraries as a dominant factor in apps' overall size.
- Developed an app trimming framework to automatically trim existing Android apps. For **40%** of the test apps, the framework can reduce the app size by **at least 10MB**.
- Contributed to a **first-authored** paper submitted to IEEE Transactions on Mobile Computing.

• Mining and Modeling User Behavior in Online Social Networks
- Applied network **packet capture** to hack the communication protocol of a widely used Location-Based Social Application (LBSA) Swarm and collected more than 33 million check-ins of 20 thousand users. Performed data processing and analysis.
- Built a machine learning based model for predicting travelers' preferences for check-in venue types.
- Contributed to a paper accepted by IEEE Communications Magazine and a paper accepted by AppLens workshop of ACM UbiComp 2018.

• LBSLab: A User Data Collection System in Mobile Environments
- leaded the front-end development of the system. Designed and developed several representative location related functions, e.g., conducting check-ins.
- Introduced the asynchronous programming pattern to the front end to reduce the latency and leveraged client-based cache to reduce the network traffic.
- This work has a position paper published in the MHC workshop of ACM Ubicomp 2018.

SELECTED AWARDS

• **Huawei Scholarship**, Fudan Univ **2018**
• **National Scholarship**, Zhejiang Univ Tech **2016**
• **Top Ten Outstanding Undergraduates**, Zhejiang Univ Tech **2016**
• **First Class Scholarship for Outstanding Students**, Zhejiang Univ Tech **2014, 2015, 2016**
• **The First Prize of Group Programming Ladder Tournament** in China Collegiate Computing Contest **2016**
• **The First Prize of Collegiate Programming Contest** in Zhejiang Province **2016**
• **Silver Medal of ACM International Collegiate Programming Contest (ACM-ICPC)**, Asian Regional **2014, 2015**

SKILLS

• **Programming Language:** Python, Java, C/C++, Ruby, C#, HTML/CSS, JavaScript, SQL, Matlab, Verilog
• **Framework and Tool:** Pytorch, Keras, TensorFlow, dgl, Android, Android Wear, Monkey, Django, MongoDB, Unity, Hadoop, Spark
• **Standard Language Tests:** TOEFL(100)