

Yu Yang

Personal Information

Email: yy388@cs.rutgers.edu

Skype: yangyu9415

Web: <https://devyang.xyz>

Address: Department of Computer Science,
Rutgers, The State University of New Jersey.
110 Frelinghuysen Road, Piscataway, NJ 08854
Office: CoRE 331

Research Interest

- Broadly interested in designing algorithms and applications for mobile, sensing and networked systems in the scope of smart cities.
- Focused on mobility modeling at large scales with hybrid sensor networks by coordinating the advantages of mobile sensors and stationary sensors.

Education

- **Rutgers University** *Piscataway, NJ*
Ph.D. student in Computer Science *Sep. 2017 – Present*
- **Rutgers University** *Piscataway, NJ*
Master of Science in Computer Science *Sep. 2015 – Jun. 2017*
- **Northeastern University** *Shenyang, China*
Bachelor of Engineering in Software Engineering *Sep. 2011 – Jul. 2015*

Publications

5. **Yu Yang**, Zhihan Fang, Xiaoyang Xie, Fan Zhang, Yang Wang, Desheng Zhang.
VeMo: Enabling Transparent Vehicular Mobility Modeling at Individual Levels with Full Penetration.
In ACM Conference on Mobile Computing & Networking (**ACM MobiCom'19**).
4. Xiaoyang Xie, **Yu Yang**, Zhihan Fang, Fan Zhang, Fan Zhang, Guang Wang, Yunhuai Liu, Desheng Zhang.
coSense: Collaborative Urban-Scale Vehicle Sensing based on Heterogeneous Fleets.
In ACM Proceedings on Interactive, Mobile, Wearable & Ubiquitous Technologies (**ACM IMWUT (UbiComp 2019)**).
3. **Yu Yang**, Fan Zhang, Desheng Zhang.
SharedEdge: GPS-Free Fine-Grained Travel Time Estimation in State-Level Highway Systems.
In ACM Proceedings on Interactive, Mobile, Wearable & Ubiquitous Technologies (**ACM IMWUT (UbiComp 2018)**).
2. Ruilin Liu, **Yu Yang**, Daehan Kwak, Desheng Zhang, Liviu Iftode, Badri Nath.
Your Search Path Tells Others Where to Park: Towards Fine-Grained Parking Availability Crowdsourcing Using Parking Decision Models.
In ACM Proceedings on Interactive, Mobile, Wearable & Ubiquitous Technologies (**ACM IMWUT (UbiComp 2017)**).
1. Ruiyun Yu, **Yu Yang**, Leyou Yang, Guangjie Han, Oguti Ann Move.
RAQ-a random forest approach for predicting air quality in urban sensing systems.
In **Sensors** 2016.

Submissions

4. **Yu Yang**, Zhihan Fang, Xiaoyang Xie, Fan Zhang, Yunhuai Liu and Desheng Zhang.
From Fewer to More: Last-Mile Vehicular Mobility Modeling based on Heterogeneous Sensor Networks.
Under Submission.

3. **Yu Yang**, Shui Wang, Fan Zhang, Yunhuai Liu, Desheng Zhang.
TransMo: Transferring Vehicular Mobility Characterization between Cities.
Under Submission.
2. Zhihan Fang, Xiaoyang Xie, **Yu Yang**, Fan Zhang, Yunhuai Liu, Desheng Zhang.
MoCha: Nationwide Vehicular Mobility Characterization For Usage-based Insurance.
Under Submission.
1. Zhihan Fang, **Yu Yang**, Shui Wang, Boyang Fu, Zixing Song, Fan Zhang, Desheng Zhang.
MAC: Measuring the Impacts of Anomalies on Travel Time of Multiple Transportation Systems
In ACM Proceedings on Interactive, Mobile, Wearable & Ubiquitous Technologies (**ACM IMWUT**)
(Major Revision).

Research Projects

- **Large Scale Mobility Modeling with Hybrid Sensor Networks (Ongoing)**
 - Aiming to model large scale vehicular mobility with mobile sensors and stationary sensors, to achieve fine-grained modeling with high penetration rates.
 - Case Study 1: Estimated the fine-grained travel time in highway systems with end-to-end travel time observations from toll stations. (UbiComp'18)
 - Case Study 2: Predicted the real-time locations of all the vehicles with only sparse observations on highways systems. (MobiCom'19)
 - Case Study 3: Transferred the mobility characteristics in a new city without service coverage by utilizing both inter-city and intra-city correlation. (Under Submission)
 - Case Study 4: Predicted the final destination of vehicles without any equipped mobile sensor after leaving the stationary sensor coverage by utilizing small amount of data from other vehicles. (Under Submission)
- **Infrastructure-free Parking Availability Crowdsourcing**
 - Aimed to estimate the availability of all the parking spots utilizing parking search paths. (UbiComp'17)
 - Modeled the parking decision model of drivers with multiple investigated features.
 - Estimated the parking available of background parking spots with the parking decision model
 - Designed an algorithm to find the optimal search path to minimize users total travel time.
- **Urban Air Quality Sensing**
 - Aimed to predict the fine-grained air quality in the urban area. (Sensors'16)
 - Designed an algorithm to predict urban air quality in Shenyang City using data from air quality monitoring stations, meteorology data, traffic report and point of interest data.

Honors

- **May, 2017** Outstanding Publication Award, Department of Computer Science, Rutgers University.
- **May, 2017** Outstanding Project Award, Department of Computer Science, Rutgers University.
- **April, 2014** Excellent Student Scholarship, Northeastern University
- **April, 2013** Excellent Student of Software College, Northeastern University

Teaching Experiences (As A Teaching Assistant)

- **CS112: Data Structures** Fall'18, Fall'19
- **CS314: Principles of Programming Languages** Spring'18
- **CS206: Introduction to Discrete Structures II** Fall'17
- **CS111: Introduction to Computer Science** Summer'17, Summer'18

Professional Activities

- **Reviewer** ACM Proceedings on Interactive, Mobile, Wearable & Ubiquitous Technologies (**IMWUT**)