

YIFANG YIN

I2R, A*STAR, 1 Fusionopolis Way, Singapore 138632

Phone: 87976252 Email: yin_yifang@i2r.a-star.edu.sg

Homepage: <https://yifangyin.github.io/>

EDUCATION

Doctor of Philosophy 2011 - 2016

School of Computing, National University of Singapore, Singapore, Singapore

- Recipient of the SoC Research Achievement Award for Semester 1, AY2015/2016.

Bachelor of Science 2007 - 2011

Computer Science and Technology, Northeastern University, Shenyang, China

- Recipient of the National Scholarship, 2008, 2009, and 2010.

WORK EXPERIENCE

Scientist III Sep. 2021 - Current

Institute for Infocomm Research, A*STAR | Singapore

- Supervised by Xiaoli Li,
- Air traffic management based on capacity estimation and demand prediction.

Senior Research Fellow Jun. 2018 – Sep. 2021

Institute of Data Science, National University of Singapore | Singapore

- Supervised by Roger Zimmermann and See-Kiong Ng,
- Automatic inference of missing geographic objects/attributes based on multimodal fusion. Work published in WWW.

Research Fellow Aug. 2016 – Jun. 2018

School of Computing, National University of Singapore | Singapore

- Supervised by Roger Zimmermann,
- Developing deep learning frameworks for acoustic event/scene detection. Work published in ACM MM and AAAI.

Research Intern Oct.. 2014 – Mar. 2015

Incubation Centre, Research and Technology Group, Fuji Xerox | Japan

- Supervised by Roshan Thapliy,
- Conducting research on personalized video summarization. Work published in IEEE TCSVT.

PROJECTS

Air Traffic Management 2021 – current

Collaborated with our partner Civil Aviation Authority of Singapore (CAAS), this project aims at developing a smart air traffic management system. Machine learning based demand prediction and capacity estimation algorithms will be implemented to facilitate air traffic management.

Machine Learning based Automatic Map Inference

2018 – 2021

Collaborated with our partner Grab, this project aims at leveraging data from the Grab platform to solve complex, real-world challenges in Southeast Asia. Through the use of AI algorithms, Grab's wealth of data can bring forth meaningful insights, such as building richer maps and modelling traffic conditions.

Deep Learning Based Acoustic Modelling

2016 – 2021

We are constantly surrounded by sounds and we rely heavily on these sounds to obtain important information about what is happening around us. This project investigates state-of-the-art sound analysis including sound event detection and acoustic scene classification, which has a significant impact in real-world applications including smart cities, surveillance, robotic navigation, and context-aware service.

Sensor-Rich Video Management System

2011 - 2016

With advances in the technology of mobile device manufacturing and network engineering, user-generated videos have become very popular in recent years. This project investigates the use of sensor data such as GPS and compass values associated with videos for robust and efficient video annotation and retrieval by conjunctively considering both the geographic and visual information.

SELECTED PUBLICATIONS

- **Yifang Yin**, Harsh Shrivastava, Ying Zhang, Zhenguang Liu, Rajiv Ratn Shah, Roger Zimmermann, “Enhanced Audio Tagging via Multi- to Single-Modal Teacher-Student Mutual Learning”. In AAAI 2021.
- **Yifang Yin**, Ying Zhang, Zhenguang Liu, Yuxuan Liang, Sheng Wang, Rajiv Ratn Shah, Roger Zimmermann, “Learning Multi-context Aware Location Representations from Large-scale Geotagged Images”. In ACM MM, 2021.
- **Yifang Yin**, An Tran, Ying Zhang, Wenmiao Hu, Guanfeng Wang, Jagannadan Varadarajan, Roger Zimmermann, and See-Kiong Ng, “Multimodal Fusion of Satellite Images and Crowdsourced GPS Traces for Robust Road Attribute Detection”. In ACM SIGSPATIAL, 2021.
- **Yifang Yin**, Ying Zhang, Zhenguang Liu, Sheng Wang, Rajiv Ratn Shah, Roger Zimmermann, “GPS2Vec: Pre-trained Semantic Embeddings for Worldwide GPS Coordinates”. In IEEE Transactions on Multimedia, 2021.
- Ying Zhang, **Yifang Yin**, Zhenguang Liu, Roger Zimmermann, “A Spatial Regulated Patch-Wise Approach for Cervical Dysplasia Diagnosis”. In AAAI 2021.
- Pengxiang Su, Zhenguang Liu, Shuang Wu, Lei Zhu, **Yifang Yin**, Xuanjing Shen, “Motion Prediction via Joint Dependency Modeling in Phase Space”. In ACM MM, 2021.
- **Yifang Yin**, Jagannadan Varadarajan, Guanfeng Wang, Xueou Wang, Dhruva Sahrawat, Roger Zimmermann, See-Kiong Ng, “A Multi-task Learning Framework for Road Attribute Updating via Joint Analysis of Map Data and GPS Traces”. In WWW 2020
- Yaman Kumar, Dhruva Sahrawat, Shubham Maheshwari, Debanjan Mahata, Amanda Stent, **Yifang Yin**, Rajiv Ratn Shah, Roger Zimmermann, “Harnessing GANs for Zero-shot Learning of New Classes in Visual Speech Recognition”. In AAAI 2020.
- Zhenguang Liu, Sihao Hu, **Yifang Yin**, Jianhai Chen, Kevin Chiew, Luming Zhang, Zetian Wu, “Interactive Rare-Category-of-Interest Mining from Large Datasets”. In AAAI 2020.
- **Yifang Yin**, Meng-Jiun Chiou, Zhenguang Liu, Harsh Shrivastava, Rajiv Ratn Shah, Roger Zimmermann, “Multi-Level Fusion based Class-aware Attention Model for Weakly Labeled Audio Tagging”. In ACM MM 2019.
- Yaman Kumar, Rohit Jain, Khwaja Mohd. Salik, Rajiv Ratn Shah, **Yifang Yin**, Roger Zimmermann, “Lipper: Synthesizing Thy Speech Using Multi-View Lipreading”. In AAAI 2019.

- **Yifang Yin**, Rajiv Ratn Shah, Roger Zimmermann, “Learning and Fusing Multimodal Deep Features for Acoustic Scene Categorization”. In ACM MM, 2018.

AWARDS

- **Outstanding Reviewer Award** IEEE ICME, 2020.
- **Best Paper Award** ACM SIGSPATIAL Workshop on GeoAI, 2019.
- **Honorable Mention Award** ACM SIGSPATIAL Workshop on PredictGIS, 2019.
- **Best Demo Award** IEEE BigMM, 2019.
- **Best Poster Runner-up Award** IEEE ISM 2018.
- **Best Paper Award** ACM SIGSPATIAL Workshop on GeoStreaming, 2016.

PROFESSIONAL SERVICE

- **Conference Co-chair** IEEE BigMM (2019, 2020), MR2AMC (2018, 2019).
- **Conference Committee** AAAI (2020, 2021, 2022), IJCAI (2019, 2021, 2022), ACM MM (2017, 2018, 2020, 2021), ICME (2019-2021).
- **Journal Reviewer** IEEE TCSVT, IEEE TKDE, IEEE OJ-COMS, ACM TOMM, OSA Applied Optics.