Ruimin KE

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EDUCATION

Ph.D.	Civil Engineering (Transportation)	University of Washington	Aug 2020 (expected)
M.S.	Computer Science	University of Illinois at Urbana-Champaign	Aug 2021 (expected)
M.S.	Civil Engineering (Transportation)	University of Washington	June 2016
B.E.	Automation	Tsinghua University	July 2014

SELECTED PROFESSIONAL EXPERIENCES

Graduate Instructor at University of Washington 09/2019 – 12/2019
- Taught a graduate-level course CET590: Traffic Simulation and Systems Operations

Graduate Research Assistant at STAR Lab 09/2014 – Present
- Have been working on multiple research projects related to traffic sensing, autonomous driving, internet of things, transportation data science, and intelligent transportation systems.

Researcher at Pierce Transit 06/2019 – 09/2019
- Developed a real-time IoT-based Transit Event Logging System (TELS) based on Nvidia Jetson TX2

Researcher at Sound Transit 09/2018 – 12/2018
- Developed a smart and efficient parking surveillance system with edge artificial intelligence on IoT devices

Research Intern at Research Institute of Tsinghua University in Shenzhen 06/2017 – 09/2017
- Developed an embedded system to detect pedestrian and automate the activation of pedestrian push button

Co-Principal Investigator (Pacific Northwest Transportation Consortium) 12/2016 – 01/2018
- Title:Developing a Cost-Effective Bus-to-Pedestrian Near-Miss Detection Method using Onboard Video Data
- Project video: https://www.youtube.com/watch?v=LPRWDhKdOiM

Researcher at Washington State Department of Transportation (WSDOT) 06/2015 – 09/2015
- Worked as one of the chief developers for a transportation big data platform used by WSDOT
- Project website: http://www.uwdrive.net/

Member 04/2017 – Present
- TRB Standing Committee on Statewide and National Data and Information Management Committee (AED10)

PROFESSIONAL SKILLS

Computer Science
- Machine Learning, Computer Vision, Distributed Systems, Internet of Things, Algorithms, Operation Systems

Intelligent Transportation Systems
- Traffic Modeling and Simulation, Transportation Data Science, Traffic Sensing, Autonomous Driving

Control Theory
- Automatic Control Theories, Linear Systems, Process Control, Signal Processing, Operations Research

SELECTED PUBLICATIONS

Ruimin Ke et al., A Smart, Efficient, and Reliable Parking Surveillance System with Edge Artificial Intelligence on IoT Devices. *IEEE Transactions on Intelligent Transportation Systems,* 2020.

Ruimin Ke et al., Advanced Framework for Microscopic and Lane-level Macroscopic Traffic Parameters Estimation from UAV Video. *IET Intelligent Transport Systems,* 2020.

Ruimin Ke et al., Two-stream Multi-channel Convolutional Neural Network for Multi-lane Traffic Speed Prediction. *Transportation Research Record,* 2020.

Ruimin Ke et al., Real-Time Traffic Flow Parameter Estimation from UAV Video Based on Ensemble Classifier and Optical Flow. *IEEE Transactions on Intelligent Transportation Systems,* 2019.

Ruimin Ke et al., New Framework for Automatic Freeway Bottleneck Identification and Quantification Based on Wavelet Analysis. *Journal of Transportation Engineering, Part A: Systems,* 2018.

Ruimin Ke et al., A Cost-Effective Framework for Automated Vehicle-Pedestrian Near-Miss Detection Through Onboard Monocular Vision. *Computer Vision and Pattern Recognition (CVPR),* 2017.

Ruimin Ke et al., Real-time Bidirectional Traffic Flow Parameter Estimation from Aerial Videos. *IEEE Transactions on Intelligent Transportation Systems,* 2017