LIUWANG KANG

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EDUCATION

University of Virginia, Charlottesville, USA
Ph.D. program in Computer Science 08/2016- 08/2021
Clemson University, Greenville, USA
Master program in Automotive Engineering 08/2014- 05/2016
Chang'an University, Xi'an, China
Master Program in Vehicle engineering 09/2011-07/2014
Bachelor of Engineering in Vehicle engineering 09/2007-07/2011

RESEARCH PROJECTS

Internet-of-things with a focus on autonomous driving 01/2017-08/2021
Electric vehicle battery energy and security in intelligent transportation systems 07/2016-12/2016
Battery aging modeling and aging propagation in the battery pack 10/2014-06/2016

PUBLICATIONS

[1] **L. Kang** and H. Shen, A Data-Driven Optimal Control Decision-Making System for Multiple Autonomous Vehicles, Proc. of the 6th ACM/IEEE Symposium on Edge Computing (**SEC**), 2021.

[2] **L. Kang** and H. Shen, A Control Policy based Driving Safety System for Autonomous Vehicles, Proc. of IEEE 18th International Conference on Mobile Ad Hoc and Smart Systems (**MASS**), 2021.

[3] **L. Kang** and H. Shen, A Data-driven Battery State-of-Health Estimation System with Aging Propagation Consideration for Electric Vehicles, Proc. of IEEE 18th International Conference on Mobile Ad Hoc and Smart Systems (**MASS**), 2021.

[4] **L. Kang** and H. Shen, A Reinforcement Learning based Decision-making System with Aggressive Driving Behavior Consideration for Autonomous Vehicles, Proc. of the 18th IEEE International Conference on Sensing, Communication and Networking (**SECON**), 2021.

[5] **L. Kang** and H. Shen, Transfer Learning-based Abnormal CAN Bus Message Detection System, Proc. of IEEE 18th International Conference on Mobile Ad Hoc and Smart Systems (**MASS**), 2021.

[6] **L. Kang**, A. Sarker, and H. Shen, Velocity Optimization of Pure Electric Vehicles with Traffic Dynamics and Driving Safety Considerations, ACM Transactions on Internet of Things (**TIOT**), 2021.

[7] **L. Kang** and H. Shen, Attack Detection and Mitigation for Sensor and CAN Bus Attacks in Vehicle Anti-lock Braking Systems, Proc. of the 29th International Conference on Computer Communications and Networks (**ICCCN**), 2020.

[8] **L. Kang** and H. Shen, Abnormal Message Detection for CAN Bus Based on Message Transmission Behaviors, Proc. of the 40th IEEE International Conference on Distributed Computing Systems (**ICDCS**), 2020.

[9] L. Yan, H. Shen, **L. Kang**, J. Zhao, C. Xu, MobiCharger: Optimal Scheduling for Cooperative EV-to-EV Dynamic Wireless Charging, Poster, Proc. of the 40th IEEE International Conference on Distributed Computing Systems (**ICDCS**), 2020.

[10] L. Yan, H. Shen, **L. Kang**, J. Zhao, C. Xu, CD-Guide: A Reinforcement Learning based Dispatching and Charging Approach for Electric Taxicabs, Proc. of IEEE 18th International Conference on Mobile Ad Hoc and Smart

Systems (**MASS**), 2020.

[11] **L. Kang** and H. Shen, Electric Vehicle Battery Energy Information is Enough to Track You, Proc. of the 19th ACM/IEEE Conference on Information Processing in Sensor Networks (**IPSN**), 2020.

[12] **L. Kang**, H. Shen, and Z. Li, Road Gradient Estimation Using Smartphones: Towards Accurate Estimation on Fuel Consumption and Air Pollution Emission on Roads, Proc. of the 39th IEEE International Conference on Distributed Computing Systems (**ICDCS**), 2019.

[13] **L. Kang**, and H. Shen, Preventing Battery Attacks on Electrical Vehicles Based on Data-driven Behavior Modeling, Proc. of the 10th ACM/IEEE International Conference on Cyber-Physical Systems (**ICCPS**), 2019.

[14] **L. Kang**, H. Shen, and A. Sarker, Velocity Optimization of Pure Electric Vehicles with Traffic Dynamics Consideration, Short paper, Proc. of the 37th IEEE International Conference on Distributed Computing Systems (**ICDCS**), 2017.

[15] **L. Kang**, X. Zhao, and J. Ma, A New Neural Network Model for The State-of-Charge Estimation in The Battery Degradation Process, **Applied Energy**, vol. 121, 2014.

EMPLOYMENT

Postdoc, University of Virginia 08/2021-05/2022

Research assistant, University of Virginia 08/2016-08/2021

TEACHING EXPERIENCE

TA in Artificial Intelligence by Prof. Haifeng Xu Spring 2020

TA in Mobile Application by Prof. Daniel G. Graham Fall 2019

TA in Discrete Math by Prof. Kevin Sullivan Fall 2018

TA in Database System by Prof. Abdeltawab Hendawi Spring 2018

PATENT

DC Power Supply with Features of Storage Cell

Patent Number: 201210005207.9

HONORS

Shaanxi Provincial Excellent Student of Graduation, 2 out of 564 2011

1st Place, China Undergraduate Mathematical Contest in Modeling Shaanxi Province Sectional 2009

Fast Gear Co. Scholarship, 1 out of 564 2008

Scholarship for Outstanding Entrance Score, Chang'an University, 1 out of 300 2007

SKILLS

Software: Matlab & Simulink, Python, SUMO.

WEBSITE:

https://lwkang.github.io/