TU XU

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CAREER OBJECTIVE

I am interested in applying machine learning and deep learning skills to address real-world challenges especially in the areas of smart city and autonomous vehicles.

EDUCATION

Georgia Institute of Technology August 2016 - Expected August 2020
Ph.D. Candidate, Civil Engineering GPA: 3.84/4.0
Advisor: Jorge. A. Laval

Fudan University August 2012 - June 2016
Bachelor of Science, Physics. GPA: 3.46/4.0

PROJECTS

Parameter Estimation of a Stochastic Car-Following Model (Thesis)
This project proposes a stochastic car-following model to explain traffic instabilities. Massive data were used to train this model. Data from Autonomous Vehicles (AV) were also analyzed to study the influence of AVs to traffic streams.

Online News Popularity Prediction
This project gives authors recommendations regarding how to capture readers' attention from data mining approaches. In this project, a data set with 40000 instances and 58 attributes is analyzed with data mining techniques including PCA and factorial analysis.

Implementing Intelligent Traffic Control on I-285
In this project, our team developed a traffic simulation application written in JAVA. Massive data were used to optimize parameters for the implementation of intelligent traffic control devices on I-285 in Atlanta. This project was sponsored by Georgia Department of Transportation.

WORK EXPERIENCE

Traffic Flow Theory Committee September 2018 - Now
Reviewer

I've reviewed 4 papers for TRB Annual Meeting and IEEE Transactions on Intelligent Transportation Systems.

Georgia Tech January 2017 - Now
Teaching Assistant

I've been the guest lecturer for graduate traffic flow course and undergraduate statistic course for many times.

Pond & Company January 2018 - May 2018
Traffic intern

Topics: Data analysis, traffic modeling and simulation

SKILLS

Programming Language	Mathematica, Python, R, MATLAB, SAS, JAVA, C
ML Framework	Pytorch

OTHER

Website: http://iamtuxu.github.io

Research Gate: https://www.researchgate.net/profile/Tu_Xu4

Github: https://github.com/iamtuxu

PUBLICATION AND PRESENTATION

Publication

Xu, T., & Laval, J. A. (2019). Analysis of a Two-Regime Stochastic Car-Following Model: Explaining Capacity Drop and Oscillation Instabilities. Transportation Research Record.
(2019 Best Paper Award in Traffic Flow Theory)

Presentation

Xu, T., & Laval, J. A. (2019). Analysis of a Two-Regime Stochastic Car-Following Model: Explaining Capacity Drop and Oscillation Instabilities. Presented at 98th Annual Meeting of the Transportation Research Board, Washington, D.C..

Xu, T., & Laval, J. A (2018). Parameter Estimation of a Stochastic Microscopic Car-Following Model. Presented at 97th Annual Meeting of the Transportation Research Board, Washington, D.C..

Under Review

Xu, T., & Laval, J. A. (2020). Driver Reactions to Uphill Grades: Inference from a Stochastic Car-following Model. Accepted by TRB Annual Meeting and recommended to Transportation Research Record for peer review.

Xu, T., & Laval, J. A. (2018). Statistical inference for two-regime stochastic car-following models. Submitted to Transportation Research Part B for peer review.