Engineering student developing traffic forecasts

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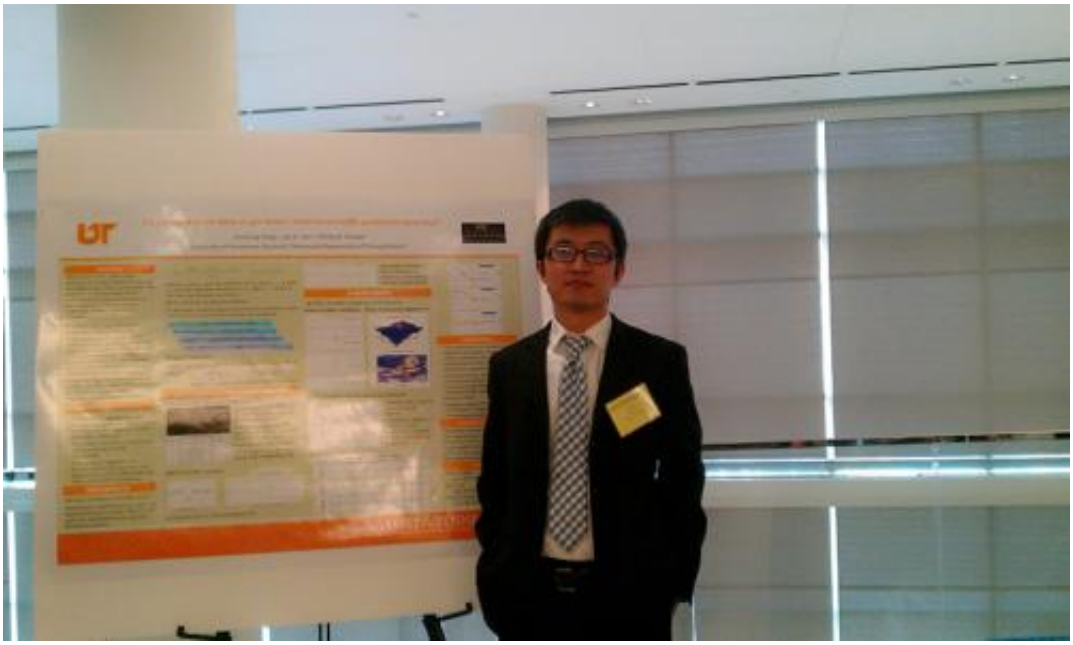

Running into unexpected traffic congestion could largely become a thing of the past thanks to an idea presented by College of Engineering student Jianjiang Yang.

Yang, a Ph.D. candidate in the Department of Civil and Environmental Engineering, recently took first place at the annual Tennessee Section meeting of the Institute of Transportation Engineers.

His paper, "Short-Term Freeway Speed Profiling Based on Longitudinal Spatial-Temporal Dynamics," addresses, from a scientific standpoint, the concept of predicting traffic flow. The Southeastern Transportation Center helped support his project.

Much like meteorologists using data and instrumentation to forecast the weather, Yang's idea focuses on officials using various means to calculate where problems and slowdowns might occur before they happen.

"Using the data cleverly can achieve a level of accuracy in short-term traffic forecasting," Yang said. "In turn, that will provide the public with more accurate travel time information when planning for a trip, instead of having to rely on 'best-case scenario' travel time calculations like we have now."

Along with the award itself, Yang received $500, an expenses-paid invitation to the group's summer meeting in Gatlinburg, Tenn., and an offer to present his paper at the meeting.

Not only could his research help drivers in the future, but it also could help the state meet a key government mandate.

"Our state can use his findings to help meet the federal goal of providing real-time traffic updates," said Lee Han, a professor in UT's Department of Civil and Environmental Engineering. "Not only that, but having his work published in a respected publication like Transportation Research Record, a journal published by the National Academies, reflects well on him, on the department and on the college."

The award isn't the first time Yang's traffic-related work has put a spotlight on UT.

In 2013, Yang, Bryan Bartnik and Zane Pannell were on UT's Traffic Bowl team that finished second in the national competition, losing in the finals by only one point.

"In just over two years after joining our program, Jianjiang has blossomed in various ways," Han said. "The Traffic Bowl team that made the grand championship beat schools like N.C. State, Penn State, Clemson and Vanderbilt along the way. The research he's done isn't with the idea of the rankings in mind, but between that and the success at events like the Traffic Bowl, he's helped increase our visibility, which in turns attracts top students to the department and the university.

"His success really has helped us in some meaningful ways."

More information: The research paper is available online: docs.trb.org/prp/14-4076.pdf

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