

5003 (CJW24-0008)

Reproducible Research: Why, What, and How

Event Description

This workshop aims to attract more attention from transportation researchers on the importance of making their work reproducible, demonstrate good reproducible research (RR) practices, stimulate healthy discussions on how to promote and reward RR, and ultimately initiate the development of an actionable strategy for setting up a guideline on how to make reproducibility an essential step of the paper review process. Workshop deliverables are short-term and medium-term plans on organizing future RR events with the Transportation Research Board and at other venues.

Zuduo Zheng, University of Queensland, Saint Lucia; Christine Buisson, Université Gustave Eiffel, presiding

Sponsored by Standing Committee on Traffic Flow Theory and Characteristics (ACP50); International Coordinating Council (A0020C); Standing Committee on Statewide/National Transportation Data and Information Management (AED10); Standing Committee on Artificial Intelligence and Advanced Computing Applications (AED50); Standing Committee on Statistical and Econometric Methods (AED60); Standing Committee on Transportation Network Modeling (AEP40); Standing Committee on Transportation Demand Forecasting (AEP50); Standing Committee on Information and Knowledge Management (AJE45)

SUMO: a popular open source, microscopic and continuous multi-modal traffic simulation package (P24-21040)

Peter Wagner, DLR - German Aerospace Center

Engaging the scientific community in shedding light on the impact of automated driving systems on traffic flow: the case of the JRC-OpenACC database (P24-21041)

Biagio Ciuffo, JRC: European Commission Joint Research Centre

Machine learning for transportation data imputation and prediction (P24-21042)

Nicolas Saunier, Ecole Polytechnique de Montreal

Xinyu Chen, Polytechnique Montréal

The Impact of Task Underspecification in Evaluating Deep Reinforcement Learning (P24-21370)

Cathy Wu, Massachusetts Institute of Technology

NSF POSE Project: CONNECT - Consortium of Open-source plANNing models for Next-generation Equitable and Efficient Communities and Transportation. (P24-21371)

Xuesong Zhou, Arizona State University

Agenda

The workshop will consist of three main parts:

Part I (60 minutes): A series of mini presentations on RR practices, aiming to illustrate the variety of tools used to make RR.

Approximately 4 researchers who have made notable effort and contributions in RR are invited to give a presentation. Each presentation will be about 10 minutes, highlighting:

- source of data
- tool to share the data
- source code
- tool to share the source code
- tool to document and publish the entire data analysis and results
- difficulties/obstacles encountered

Invited speakers and topics (tentative) include:

- Dr. Peter Wagner (German Aerospace Center) on SUMO (a popular open source, microscopic and continuous multi-modal traffic simulation package);
- Dr Biagio Ciuffo (Joint Research Centre, European Commission) on "*Engaging the scientific community in shedding light on the impact of automated driving systems on traffic flow: the case of the JRC-OpenACC database*"
- Dr. Nicolas Saunier (Polytechnique Montreal) on the transdim project "*Machine learning for transportation data imputation and prediction*";
- One or two more speakers will be added later.

Part II (60 minutes): Q&A and interactive discussion.

In the beginning, the audience will be given the opportunity to ask questions related to the presentations from Part I. When there is no more question to the presenters, the workshop will enter the interactive discussion part. To facilitate this interactive discussion, some interactive tool will be used. We will design structured questions with Mentimeter or a similar tool (e.g., multiple choice, ranking, proposing keywords, ...). The results will be used as input for the discussion. Rather than running a single common discussion, participants will be divided into small groups to generate more diverse ideas. Each group will designate a rapporteur to present their findings to the whole group (best practices, ideas to overcome challenges). We use this interactive discussion as an opportunity to collect experiences and information from the audience on all aspects of RR. We also collect ideas on how to promote RR in our community.

Part III (30 minutes): A short survey and conclusion remarks. At the end of the discussion, a short survey will be conducted to receive feedback regarding the workshop and any missed topics. We will process the answers afterwards and use them as input for the next actions/events. We will also use this opportunity to promote the Special Issue on RR in a journal.

The total duration of the workshop will be within 2.5 hours.

Session Type: Workshop (CJW24-0008)

Subject Areas: Education and Training; International Activities; Operations and Traffic Management; Research (about research)