NSF Workshop on

Exuberance of Machine Learning in Transport Phenomena

February 10-11, Dallas, TX

With the success of Machine Learning (ML) in computer vision, natural language processing, autonomous vehicles, and many other disciplines, it is not surprising to witness its popularity within the computational science and engineering community. Both conventional machine learning and the state of the art deep learning methods have proven effective in transport phenomena, and it is expected that the rate of progress would be even faster in the near future.

The objective of this workshop is to assess the state of progress in development, implementation and application of ML in transport phenomena. Of particular interest are applications in fluid dynamics, including turbulence, heat & mass transfer, multi-phase flows, biological transport, combustion and other reactive flows. Considering the complexity of such phenomena, the question is to what to expect from ML and to what extend such learnings can assist in modeling and inference of transport phenomena.

Distinguished scholars with expertise in both machine learning and transport phenomena of these fields are invited to discuss their recent results, and to identify the paths to be taken in future to merge ML into modeling of transport phenomena.

Venue

The workshop will be held be held at Martha Proctor Mack Grand Ballroom, located on the third floor of the Umphrey Lee Center at 3300 Dyer Street, Dallas, TX in Southern

Program Committee

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Travel

Dallas is served by two airports. The nearest airport to SMU is Dallas Love Field (DAL), which is 4 miles to the SMU Campus with an approximate drive time of 20 minutes. DAL is a smaller airport, which mainly serves Southwest Airlines in addition to Delta Airlines. The second airport is Dallas-Fort Worth International Airport (DFW) which is about 23 miles from the hotel with an approximate drive time of 40 minutes. DFW is a hub for American Airlines and serves almost all major airlines in the US.

Publication

We will have technical presentations, with subsequent publication of the workshop proceedings.

Registration

Early registration (prior to January 10, 2020):

* Professionals: $200
* Students & Postdocs: $100

Late registration (after January 10, 2020):

* Professionals: $300
* Students & Postdocs: $150

Please [click here](https://eswp.com/pitt/" \t "_blank) to register for the Workshop

Agenda

To be updated.

Accommodations

The following hotels are within waking distances from the Umphrey Lee Center, and are recommended:

1. Hotel Lumen <https://www.thelumendallas.com> (5 minutes walking distance): SMU discount code: SMV.

Booking Link: <https://be.synxis.com/?adult=1&arrive=2019-07-09&chain=21643&child=0&currency=USD&depart=2019-07-10&hotel=8347&level=hotel&locale=en-US&promo=SMV&rooms=1&sbe_ri=0>

2. Magnolia Hotel Dallas Park Cities <https://magnoliahotels.com/dallas-park-cities/> (15 minutes walking distance). SMU discount code: SMUF.

Booking Link: <https://magnoliahotels.com/dallas-park-cities/southern-methodist-university/>

3. The Highland Dallas <https://curiocollection3.hilton.com/en/hotels/texas/the-highland-dallas-curio-collection-by-hilton-DALCUQQ/index.html> (15 minutes walking distance). SMU discount code: call hotel.

Booking Link: <https://curiocollection3.hilton.com/en/hotels/texas/the-highland-dallas-curio-collection-by-hilton-DALCUQQ/index.html>

4. Doubletree Campbell Center <https://doubletree3.hilton.com/en/hotels/texas/doubletree-by-hilton-hotel-dallas-campbell-centre-DFWCNDT/index.html> . SMU Corporate Acct. 0560027743.

Booking Link: <https://doubletree3.hilton.com/en/hotels/texas/doubletree-by-hilton-hotel-dallas-campbell-centre-DFWCNDT/index.html>

5. Hampton Inn Suites Dallas Central Expressway/Northpark Area. <https://hamptoninn3.hilton.com/en/hotels/texas/hampton-inn-and-suites-dallas-central-expy-north-park-area-DFWNPHX/index.html> SMU Corporate Acct. 0002700605

Booking Site: <https://secure3.hilton.com/en_US/hp/reservation/book.htm?execution=e1s1>

6. Courtyard by Marriott Central Expressway. <https://www.marriott.com/hotels/travel/dalcc-courtyard-dallas-central-expressway/> SMU discount code: SOU

Booking Site: <https://www.marriott.com/reservation/availability.mi?MarshaCode=DALCC&WT_Ref=MI_SC&path=marriott&cc=sou>

7. The following website also has links to all SMU discounted hotels. <https://www.smu.edu/Admission/Visit/WhereToSta>

8. Also see: [www.campustravel.com/university/smu](http://www.campustravel.com/university/smu)

Sponsors

The Workshop is sponsored by:

* National Science Foundation
* [Swanson School of Engineering, University of Pittsburgh](https://www.engineering.pitt.edu/)

Contacts

Please contact any of the members of the Program Committee for general questions. For questions regarding local logistics and registration, please contact Ali Beskok ([abeskok@smu.edu](mailto:abeskok@smu.edu)).