



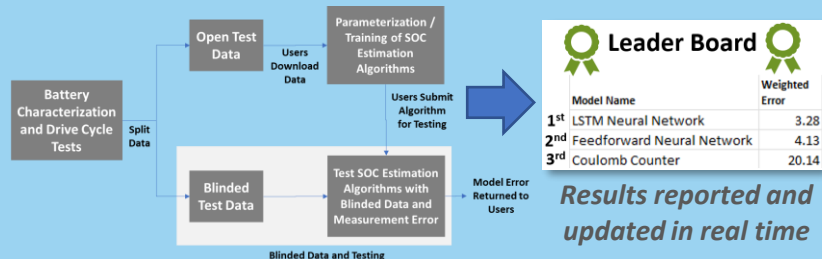
2023 ITEC BATTERY STATE OF CHARGE ESTIMATION STUDENT CHALLENGE

Call for Participants

Introduction

The IEEE Transportation Electrification Conference (ITEC) invites you to participate in the 2023 ITEC Battery State of Charge Estimation Student Challenge. With the huge growth of battery applications, state estimation is becoming an ever more important skill for engineers. The contest is a great opportunity to develop new skills – last year’s winning team had no prior experience in state of charge estimation – or to showcase the quality of algorithms you have already developed and published. Winning teams will receive a cash award and have the opportunity to showcase their results at ITEC 2023!

Challenge: Competitors will be challenged to create the best performing electric vehicle battery state of charge estimation algorithm. Teams will be provided with a high-quality dataset consisting of Li-ion battery characterization and drive cycle test data over a wide range of temperatures. Teams will submit their algorithms in MATLAB script format via an electronic portal. Algorithms will be tested automatically using a set of data which the competitors are blind to, and the error for each test case will be reported back. This *blinded* SOC estimation development approach allows for a fair comparison of the submitted algorithms. The winner will be selected primarily based on quantitative performance metrics. Algorithms do not need to be new or unique. Teams are encouraged to use algorithms from their current or prior research and from the literature, as much of the effort is in the algorithm implementation & tuning/training.



Dataset & Online SOC Estimator Submission Portal:

- <https://borealisdata.ca/dataset.xhtml?persistentId=doi:10.5683/SP3/ZVTR4B>

Schedule:

- Contest sign up form (open till April 30, 2023): <https://forms.office.com/r/tMPb7HCCvd>
- Teams submit requests for information / clarification: Continuously, but no later than May 31, 2023
- Teams submit final SOC estimators and brief summary report no later than June 14, 2023
- Winning teams announced at ITEC 2023, June 21-23, 2023

Eligibility: Each student can only be on one team. Conference registration is **not needed** to participate.

Teams can consist of the following:

- Undergraduate students
- Graduate students
- Combined undergrad and graduate students

Prize – Sponsored by MathWorks:

- 1st Place: \$750
- 2nd Place: \$500
- 3rd Place: \$250



Each winning team will also have the opportunity to present a poster and receive one free registration if they would like to attend the conference

All questions related to the contest should be addressed to:
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