AIChE

Rocky Mountain AIChE News

September Section Meeting
ALAMO: Machine Learning from Data and First Principles

We have developed the ALAMO methodology with the aim of producing a tool capable of using data to learn algebraic models that are accurate and as simple as possible. ALAMO relies on optimization algorithms in order to (a) build low-complexity models from input-output data, (b) collect additional data points that can be used to improve tentative models, and (c) enforce physical constraints on the mathematical structure of the model. We present computational results and comparisons between ALAMO and a variety of learning techniques, including Latin hypercube sampling, simple least-squares regression, and the lasso. We also describe results from applications in CO_2 capture that motivated the development of ALAMO.

Nick Sahinidis is Butler Family Chair and Professor of Industrial & Systems Engineering and Chemical & Biomolecular Engineering at Georgia Tech. Prior to joining Georgia Tech, he taught at the University of Illinois at Urbana-Champaign (1991-2007) and Carnegie Mellon University (2007-2020). He has pioneered algorithms and developed widely used software for optimization and machine learning. Professor Sahinidis' research won the INFORMS Computing Society Prize in 2004, the Beale-Orchard-Hays Prize from the Mathematical Programming Society in 2006, the Computing in Chemical Engineering Award in 2010, the Constantin Carathéodory Prize in 2015, and the National Award and Gold Medal from the Hellenic Operational Research Society in 2016. Professor Sahinidis is a fellow of INFORMS and AIChE. He is the Editor-in-Chief of Optimization and Engineer.

September Section Meeting

Topic:	ALAMO: Machine Learning from Data and First Principles
Speaker:	Nick Sahinidis, Butler Family Chair and Professor, H. Milton Stewart School of Industrial & Systems Eng. and School of Chemical & Biomolecular Eng., Georgia Institute of Technology
Date:	Tuesday, September 8
Time:	5:30 – Introduction 5:45 – Presentation 6:45 – Questions & Answers
Cost:	Free, Registration Required
Location:	Online Webex meeting

REGISTRATION REQUIRED. More information can be found on our website.

Register

After your request has been approved, you'll receive instructions via email for joining the meeting.

Need help? Go to http://help.webex.com

AIChE Meetings

2020

Sep 14-16   [2020 Engineering Cosmetics and Consumer Products Conference](#)
Virtual

Sep 15-17   [Center for Hydrogen Safety US Conference 2020](#)
Virtual

Nov 4-6   [3rd Food Innovation and Engineering (FOODIE) Conference](#)
Virtual

Nov 12-14   [2nd Emerging Meat Alternatives Conference (EMAC)](#)
Virtual

Nov 16-20   [2020 AIChE General Meeting](#)
Virtual

Nov 15   [2020 K-12 STEM Outreach Competition](#)
Virtual

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The objectives of AIChE are to advance chemical engineering in theory and practice, to maintain a high professional standard among its members, and to serve society, particularly where chemical, engineering can contribute to the public interest.
AIChE Rocky Mountain is a public non-profit 501(c)(3) organizations and thus any and all donations are tax deductible.

MEETING SCHEDULE

The Rocky Mountain District of AIChE generally meets the second or third Tuesday of every month, September through November and January through May.