



# Applying Machine Learning to Engineering and Science

## Course Objectives

- Improve engineering problem-solving capabilities through machine learning
- Quantify risk and clarify salient features from data in complex systems
- Accelerate predictions even with missing or sparse data
- Understand when machine learning would be helpful and know when it's *not*..

## Selected Topics for Industry

- Machine Learning for Accelerating Computational Materials Discovery
- Feature Engineering and Selection in Li-Ion Battery Life Prediction
- Machine Learning for Computational Imaging
- Quantifying Risk in Complex Systems using Machine Learning
- Prediction of Oil and Gas Production
- Spinning Up a Machine Learning Program in your Company
- Practical Machine Learning in Composite Design
- Seismic Deepfakes: Neural Nets to Generate Missing Data

## Faculty



**Youssef Marzouk**  
*Associate Professor of Aeronautics & Astronautics & Co-director of the Center for Computational Engineering and Science*



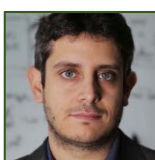
**Heather Kulik**  
*Associate Professor of Chemical Engineering*



**Richard Braatz**  
*Edwin R. Gilliland Professor of Chemical Engineering*



**George Barbastathis**  
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*Associate Professor of Electrical Engineering and Computer Science*



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*Professor Civil & Environmental Engineering*



**Markus Buehler**  
*McAfee Professor of Engineering & Head, Department of Civil & Environmental Engineering*



**Laurent Demanet**  
*Professor of Applied Mathematics & Director of MIT's Earth Resources Laboratory*

*Course content and schedule is subject to change.*

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