

MIT Professional Education Announces Live Virtual Course on Machine Learning for Materials Informatics

The 4-day program, which debuts September 26-29, 2022, will teach the fundamentals necessary to reach the next milestone in materials design by navigating the complex world of AI.

CAMBRIDGE, Mass. ([PRWEB](#)) August 22, 2022 -- MIT Professional Education is launching a new live virtual course, "[Machine Learning for Materials Informatics](#)." The 4-day program, which debuts September 26-29, 2022, will teach the fundamentals necessary to reach the next milestone in materials design by navigating the complex world of AI.

“With data available from autonomous experimentation, large databases like the materials genome initiative, high-throughput experimentation, or synthetic data – there are many opportunities to accelerate and expand materials development. This course will introduce participants to the new modeling and simulation methods to create better, more resilient, and more functional materials,” said instructor Markus Buehler, McAfee Professor of Engineering at MIT.

The interactive program includes lectures, clinics, and labs focused on how to design and apply modern material informatics tools and large-scale multiscale modeling. It is grounded in relevant examples and case studies from various fields, including structural materials, electronic materials, additive manufacturing, nanotechnology, healthcare, pharma, and biomedical engineering. In addition, the course will explore how to improve material sustainability by minimizing energy use and creating multifunctional materials. The topics covered include:

- Modern and cutting-edge machine learning tools – Primarily focused on deep learning (including convolutional neural nets, adversarial methods, graph neural nets, autoencoders, and transformer models; including neural molecular dynamics)
- Working across data modalities – Analysis of images, voxel data, dynamical data, and graphs, as well as language and symbolic methods and hybrid approaches. Features in-depth discussion of material databases, synthetic datasets, and data collection in materials development
- Visualization and data analysis methods – Statistical methods, cluster analysis, graphic rendering, virtual reality; as well as interpretable machine learning are included

“In keeping with MIT’s motto of “mens et manus” (mind and hand), this course will explore the application of machine learning tools in designing new materials with remarkable mechanical properties,” said Bhaskar Pant, Executive Director of MIT Professional Education. “Professor Markus Buehler is at the forefront of this research and is committed to sharing his groundbreaking work to help others in a wide array of societal challenge fields such as health, energy, and sustainability.”

[Machine Learning for Materials Informatics](#) may be taken individually or as part of the [Professional Certificate Program in Design & Manufacturing](#) or the [Professional Certificate Program in Machine Learning & Artificial Intelligence](#).

To register or for more information, visit professional.mit.edu.



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