



USING ARTIFICIAL INTELLIGENCE TO HELP MANUFACTURERS SLASH PRODUCT DESIGN TIME AND COST

THE CHALLENGE

In a manufacturing setting, designing and building a new product—such as a car engine or a wind turbine—can take a long time and be quite costly.

The traditional approach to design optimization of a new product involves a lot of experimental testing, evaluating prototypes and testing multiple design iterations until a set of promising designs is found.

As the volume and complexity of data increases, engineers face the challenge of making sense of the multi-dimensional information and determining efficient, sound decisions. This uncertainty increases the number of costly experimental test campaigns, lengthens development timescales and raises the cost of development.

ARGONNE'S SOLUTION

In an effort to combat these limitations, industries increasingly rely on high-fidelity computer models as virtual representations of real-world devices, which improves costly physical development and testing but, unfortunately, is time-consuming.

To expedite the process from several hours to a few milliseconds, Argonne National Laboratory has augmented the high-fidelity modeling with machine learning to dramatically accelerate the process while maintaining the reliability of the data.

THE IMPACT

By tapping into Argonne's cutting-edge machine learning techniques, companies reduce design time from months to days while slashing development costs.

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