



Khaled Salah Mohamed

# Machine Learning for Model Order Reduction

- Introduces machine learning algorithms at the architecture level and the algorithm levels of abstraction
- Describes new, hybrid solutions for model order reduction
- Presents machine learning algorithms in depth, but simply
- Uses real, industrial applications to verify algorithms

This Book discusses machine learning for model order reduction, which can be used in modern VLSI design to predict the behavior of an electronic circuit, via mathematical models that predict behavior. The author describes techniques to reduce significantly the time required for simulations involving large-scale ordinary differential equations, which sometimes take several days or even weeks. This method is called model order reduction (MOR), which reduces the complexity of the original large system and generates a reduced-order model (ROM) to represent the original one. Readers will gain in-depth knowledge of machine learning and model order reduction concepts, the tradeoffs involved with using various algorithms, and how to apply the techniques presented to circuit simulations and numerical analysis. Introduces machine learning algorithms at the architecture level and the algorithm levels of abstraction; Describes new, hybrid solutions for model order reduction; Presents machine learning algorithms in depth, but simply; Uses real, industrial applications to verify algorithms.

1st ed. 2018, XI, 93 p.

## Printed book

Hardcover

119,99 € | £109.99 | \$149.99

<sup>[1]</sup>128,39 € (D) | 131,99 € (A) | CHF

141,50

Softcover

119,99 € | £109.99 | \$149.99

<sup>[1]</sup>128,39 € (D) | 131,99 € (A) | CHF

141,50

## eBook

96,29 € | £87.50 | \$109.00

<sup>[2]</sup>96,29 € (D) | 96,29 € (A) | CHF

113,00

Available from your library or  
[springer.com/shop](http://springer.com/shop)

## MyCopy <sup>[3]</sup>

Printed eBook for just

€ | \$ 24.99

[springer.com/mycopy](http://springer.com/mycopy)

Order online at [springer.com](http://springer.com) / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: [customerservice@springernature.com](mailto:customerservice@springernature.com). / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: [customerservice@springernature.com](mailto:customerservice@springernature.com).

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

