1. Record Nr. UNINA9911019358903321

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Titolo	Artificial Intelligence for Power Electronics
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2025 ©2025
ISBN	1-394-27080-1 1-394-27079-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (398 pages)
Altri autori (Persone)	MekhilefSaad MalikAzra
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Thorough review of how artificial intelligence can enhance the design, control, and optimization of power electronics systems Artificial Intelligence for Power Electronics provides a comprehensive overview of the intersection between artificial intelligence (AI) and the field of power electronics, exploring how AI can revolutionize and enhance the design, control, and optimization of power electronics systems. The book covers the fundamentals of AI and power electronics, and the challenges the field faces in design to production, with the solutions of these challenges through AI methods. Example solutions, along with Q&A review sections, are included throughout the text, with coverage of both Python and MATLAB. Some of the topics discussed in this book include: Supervised, unsupervised, and reinforcement machine learning and the role of data in training machine learning models Techniques for AI data collection in power electronics and how to clean, normalize, and handle missing values of data Optimization techniques such as Particle Swarm Optimization and Ant Colony Optimization Detection techniques for identifying faults and anomalies and clustering algorithms to group similar operational behavior Essential Python libraries for machine learning and how to perform machine learning on a Raspberry Pi Delivering an industry-specific approach to

AI applications, Artificial Intelligence for Power Electronics is a helpful reference for undergraduate, postgraduate, and PhD students in electrical, electronic, and computer engineering. Mechanical engineers and other industry professionals may also find it valuable.