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	Descrizione fisica	1 online resource (XVII, 110 p. 46 illus., 25 illus. in color.)
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	Disciplina	006.31
	Soggetti	Artificial intelligence
		Image processing - Digital techniques
		Computer vision
		Data mining
		Artificial Intelligence
		Computer Imaging, Vision, Pattern Recognition and Graphics
		Data Mining and Knowledge Discovery
	Lingua di pubblicazione	Inglese
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	Nota di contenuto	Introduction -- Supervised Learning Problem Formulation -- Neural Networks from Scratch -- Optimization Methods -- Deep in the Wild -- Convolutional Neural Networks as Image Analysis Tool -- Dynamic Content Mining -- Case Study for Digital Cultural Content Mining -- Introducing Domain Knowledge.
	Sommario/riassunto	This book provides the reader with the fundamental knowledge in the area of deep learning with application to visual content mining. The authors give a fresh view on Deep learning approaches both from the point of view of image understanding and supervised machine learning. It contains chapters which introduce theoretical and mathematical foundations of neural networks and related optimization methods. Then it discusses some particular very popular architectures used in the domain: convolutional neural networks and recurrent neural networks. Deep Learning is currently at the heart of most cutting edge technologies. It is in the core of the recent advances in Artificial Intelligence. Visual information in Digital form is constantly growing in

volume. In such active domains as Computer Vision and Robotics visual information understanding is based on the use of deep learning. Other chapters present applications of deep learning for visual content mining. These include attention mechanisms in deep neural networks and application to digital cultural content mining. An additional application field is also discussed, and illustrates how deep learning can be of very high interest to computer-aided diagnostics of Alzheimer's disease on multimodal imaging. This book targets advanced-level students studying computer science including computer vision, data analytics and multimedia. Researchers and professionals working in computer science, signal and image processing may also be interested in this book.