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Embedded Artificial Intelligence: Bridging the Gap Between Hardware and Deep Learning

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The IEEE CAS Seasonal School on Technologies for Artificial Intelligence tackles the critical skill gap between embedded technology and deep learning. Supported by European projects FVLLMONTI, HERMES, and RadioSpin, this event fosters a transdisciplinary community focused on embedded artificial intelligence.

Modern AI and deep learning often require extensive computing resources, impacting security and privacy. Embedded AI offers a solution by running machine learning models on edge devices, necessitating optimized software–hardware integration and energy-efficient neural network hardware. This school equips participants with the skills to innovate in circuit design and execute data-intensive applications on limited-resource devices.

The curriculum covers neural network basics, hardware enhancement, electrical characterization, and neuromorphic device design. Key topics include 6G transceiver optimization, transformer architectures for machine translation, and intelligent sensors for practical applications like RF fingerprint recognition and breast cancer detection.

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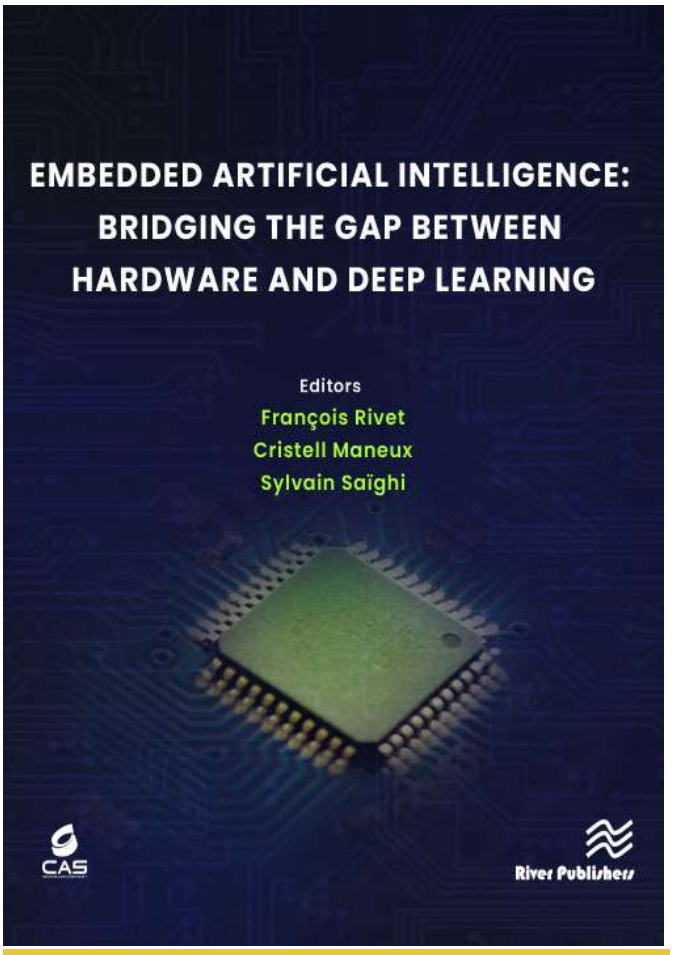
2. Transformer Architectures for Machine Translation and Speech Processing
3. Electrical Characterization of Functionality
4. Connecting Intelligences
5. Introductory Aspects of Neural Networks



River Publishers Series in Circuits and Systems

e-ISBN: 9788770047678
Available From: January 2025
Price: $ 130.00

KEYWORDS:
Artificial intelligence, embedded technology, deep learning, skill gap, H2020 projects, FVLLMONTI, HERMES, radiospin, computing resources, security, privacy, edge devices, software-hardware integration, energy-efficient, neural networks, circuit design, data-intensive applications, electrical characterization, neuromorphic devices, machine translation

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