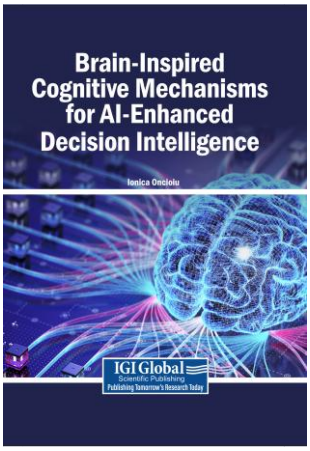
Brain-Inspired Cognitive Mechanisms for AI-Enhanced Decision Intelligence:

Ionica Oncioiu, (Titu Maiorescu University, Romania)



Description:

Recent advances in artificial intelligence (AI) have expanded the role of intelligent systems in complex decision-making. At the same time, progress in neuroscience and cognitive science has improved understanding of human cognition, including perception, learning, and reasoning. Together, these developments have driven interest in integrating brain-inspired mechanisms into AI, contributing to the emergence of AI-enhanced decision intelligence. This area focuses on creating more coherent, robust, and context-aware decision processes, an increasingly important goal as intelligent systems shape real-world decision-making.

Brain-Inspired Cognitive Mechanisms for AI-Enhanced Decision Intelligence investigates the integration of brain-inspired cognitive mechanisms into AI-based decision intelligence systems. This book brings together multiple theoretical and methodological perspectives from AI, cognitive science, and neuroscience to examine how cognitive processes such as perception, learning, memory, and reasoning can be modeled and incorporated into intelligent decision-support systems. Covering topics such as explainable and interpretable decision intelligence, brain-computer interface systems, and cerebral command automation, this book is an excellent academic resource for graduate and doctoral students, AI and machine learning researchers, computational neuroscientists, data scientists, healthcare informatics professionals, policymakers, and more.

ISBN: 9798337389882 **Pages:** 400 **Copyright:** 2026 **Release Date:** 5/29/2026

Hardcover: $240 **Softcover:** $200 **E-Book:** $230 **Hardcover + E-Book:** $240

Topics Covered:

- Artificial Intelligence (AI)
- Brain-Computer Interface (BCI) Systems
- Brain-Controlled Technology
- Cerebral Command Automation
- Cognitive Computing
- Cognitive Mechanisms
- Decision Intelligence
- EEG-Based Signal Processing
- Ensemble Meta classification Approach
- Human-Centered AI Systems

Subject: Computer Science and IT
Readership Level: Advanced-Academic Level (Research Recommended)

Classification: Edited Research
Research Suitable For: Advanced Undergraduate Students; Graduate Students; Researchers; Academicians; Professionals; Practitioners

Order Information
Phone: 717-533-8845 x100
Toll Free: 1-866-342-6657
Fax: 717-533-8661 or 717-533-7115
www.igi-global.com
Address: 701 East Chocolate Avenue, Hershey PA, 17033, USA

IGI Global
Scientific Publishing
Publishing Tomorrow's Research Today