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Information technology — Artificial intelligence (AI) — Overview of computational approaches for AI systems

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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Introduction

Artificial intelligence (AI)-related products, systems and solutions have become more common in recent years thanks to rapid software and hardware improvements that boost computational performance, data storage capabilities and network bandwidth. The intent of this document is to look at computational methods and approaches within AI systems. Based on ISO/IEC 22989[1)], ISO/IEC 23053[2)] and ISO/IEC TR 24030, this document provides a description of the characteristics of an AI system and its computational approaches. The illustration of computational approaches in AI systems includes both machine learning and non-machine learning methods. To reflect state-of-the-art methods used in AI, this document is structured as follows:

— Clause 5 provides an overall description of computational approaches in AI systems;

— Clause 6 discusses the main characteristics of AI systems;

— Clause 7 provides a general taxonomy of computational approaches, including knowledge-driven and data-driven approaches;

— Clause 8 discusses selected algorithms used in AI systems, including basic theories and techniques, main characteristics and typical applications.

By giving an overview of different technologies used by AI systems, this document is intended to help users understand computational characteristics and approaches used in AI.

1) Under preparation. Stage at the time of publication: ISO/IEC DIS 22989:2021.

2) Under preparation. Stage at the time of publication: ISO/IEC DIS 23053:2021.