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**Biomimetics - Image search engine
(English Translation)**

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Foreword

This document is a report-type guidance technical document.

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1.Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is equivalent to ISO /T R23846.2022 "Bionic Image Search Engine".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on

Standardization of Bionics (SAC/TC598).

Introduction

Bionics is a field that draws inspiration from observing and analyzing the structure, function, and production processes of organisms to develop new technologies.

Science and technology, or the use of these inspirations in the manufacturing process. The term bionics was first coined by the American neurophysiologist Otto...

Schmitt first used it in the 1950s.

Since ancient times, humankind has imitated the forms and structures of living organisms, as well as their functions, to create objects. (Renaissance)

During the early 18th century, Leonardo da Vinci conceived of flying machines through precise observation of birds-a well-known story.

During this period, French engineer Marc Brunel was inspired by shipworms using their secretions to burrow through wood and push sawdust out the back, and designed the tunnel boring machine.

Tunnels. Recently, inspired by the shark skin texture to reduce water resistance, a high-speed swimsuit with a shark skin texture has been developed. (Kansai University, Engineering Department, Japan)

Inspired by mosquitoes, Seiji Aoyagi developed a "microneedle" to reduce pain during vaccination. These are examples of biomimicry.

The examples demonstrate how organisms can successfully overcome the challenges of manufacturing products or technologies. However, in these successful examples, biology and...

The relationship between engineering and other disciplines is largely due to the capabilities of researchers. In recent years, information technology, represented by big data and artificial intelligence, has become increasingly important.

Significant progress has been made, making the analysis of large amounts of text or images much easier, which was previously difficult due to limitations in computer performance.

Yes, it has been achieved. Therefore, the use of information technology will enable us to consider various combinations beyond human capabilities, greatly enhancing biomimicry.

The application potential of learning (see Figure 1).

Bionic Image Search Engine

1 Scope

This document describes a prototype of an Image Search Engine (ISE), focusing on its usage and value, and also describes its design.

in principle.

2 Normative references

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

ISO /T R23845 Biomimetics-Ontology-Enhanced Thesaurus (OET)

Note: GB /Z 260-2026 Bionics - Ontology-Enhanced Thesaurus for Bionics (ISO /T R23845.2020, IDT)

3 Terms and Definitions

The terms and definitions defined in ISO /T R23845 and the following terms and definitions apply to this document.

ISO and IEC maintain a database of terms used for standardization at the following addresses.

3.1

data

The smallest unit of information that is meaningful to its potential readers or users.

Note: In many cases, data is a component of a larger entity, such as a dataset or database. Data may be in textual form, such as a research paper, or...

It can include simulation models, algorithms, numbers, images, charts, audio and video recordings, etc.

3.2

database

A collection of almost any digital object, such as text, images, sound, video, etc.

3.3

Image retrieval system

A computer system used to browse, search, and retrieve images from large digital image databases.

Data retrieval

The act of retrieving data from a database management system (DBMS), such as from an operational database management system (ODBMS).

data.

3.5

Ontology

In the fields of knowledge management and artificial intelligence, this refers to the formalization, structuring, and explicit definition of concepts and their interrelationships within a specific domain.

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