

.3 *Artificial intelligence and natural computing

Standard subdivisions are added for artificial intelligence and natural computing together, for artificial intelligence alone

Class here computational intelligence, intelligent agents, multi-agent systems, question-answering systems, comprehensive works on artificial intelligence and cognitive science

Class swarm intelligence in 006.3824; class robotics in 629.892

For cognitive science, see 153

See also 005.115 for logic programming; also 006.4 for pattern recognition not used as a tool of artificial intelligence

See Manual at 006.3 vs. 153

.31 *Machine learning

For machine learning in knowledge-based systems, see 006.331

Genetic algorithms, genetic programming relocated to 006.3823

.38 *Natural computing

For information processing in nature, see 570

.382 *Nature-inspired models and techniques of computation

Standard subdivisions are added for either or both topics in heading

Including amorphous computing

Class here biologically-inspired computing

For neural networks, see 006.32; for computing with natural materials, see 006.384

.382 2 *Cellular automata**.382 3 *Evolutionary computation**

Class here genetic algorithms, genetic programming [*both formerly 006.31*], evolutionary programming

.382 4 *Swarm intelligence

Including ant algorithms, particle swarm optimization

.382 5 *Artificial immune systems

Class here immunocomputing

.382 6 *Artificial life**.384 *Computing with natural materials****.384 2 *Molecular computing**

Variant names: biomolecular computing, biocomputing

Class here biochemical computing, DNA computing

*Use notation 019 from Table 1 as modified at 004.019

.384 3

*Quantum computing