

# CPC COOPERATIVE PATENT CLASSIFICATION

## G PHYSICS (NOTES omitted)

### INSTRUMENTS

## G06 COMPUTING; CALCULATING; COUNTING (score computers for games [A63B 71/06](#), [A63D 15/20](#), [A63F 1/18](#); combinations of writing implements with computing devices [B43K 29/08](#)) (NOTES omitted)

## G06N COMPUTER SYSTEMS BASED ON SPECIFIC COMPUTATIONAL MODELS

### WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- |             |                                                                                                                                                                                         |             |                                                                                                                                                                        |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3/00</b> | <b>Computer systems based on biological models</b>                                                                                                                                      | 3/084       | . . . {Back-propagation}                                                                                                                                               |
| 3/002       | . {Biomolecular computers, i.e. using biomolecules, proteins, cells (using DNA <a href="#">G06N 3/123</a> ; using neurons <a href="#">G06N 3/061</a> )}                                 | 3/086       | . . . {using evolutionary programming, e.g. genetic algorithms}                                                                                                        |
| 3/004       | . {Artificial life, i.e. computers simulating life}                                                                                                                                     | 3/088       | . . . {Non-supervised learning, e.g. competitive learning}                                                                                                             |
| 3/006       | . . {based on simulated virtual individual or collective life forms, e.g. single "avatar", social simulations, virtual worlds or particle swarm optimisation}                           | 3/10        | . . Simulation on general purpose computers                                                                                                                            |
|             |                                                                                                                                                                                         | 3/105       | . . . {Shells for specifying net layout}                                                                                                                               |
|             |                                                                                                                                                                                         | 3/12        | . using genetic models                                                                                                                                                 |
| 3/008       | . . {based on physical entities controlled by simulated intelligence so as to replicate intelligent life forms, e.g. robots replicating pets or humans in their appearance or behavior} | 3/123       | . . {DNA computers, i.e. information processing using biological DNA}                                                                                                  |
|             |                                                                                                                                                                                         | 3/126       | . . {Genetic algorithms, i.e. information processing using digital simulations of the genetic system}                                                                  |
| 3/02        | . using neural network models                                                                                                                                                           | <b>5/00</b> | <b>Computer systems using knowledge-based models</b>                                                                                                                   |
| 3/04        | . . Architectures, e.g. interconnection topology                                                                                                                                        | 5/003       | . {Dynamic search techniques; Heuristics; Dynamic trees; Branch-and-bound}                                                                                             |
| 3/0409      | . . . {Adaptive resonance theory [ART] networks}                                                                                                                                        | 5/006       | . . {Automatic theorem proving}                                                                                                                                        |
| 3/0418      | . . . {using chaos or fractal principles}                                                                                                                                               | 5/02        | . Knowledge representation                                                                                                                                             |
| 3/0427      | . . . {in combination with an expert system}                                                                                                                                            | 5/022       | . . {Knowledge engineering; Knowledge acquisition}                                                                                                                     |
| 3/0436      | . . . {in combination with fuzzy logic}                                                                                                                                                 | 5/025       | . . {Extracting rules from data}                                                                                                                                       |
| 3/0445      | . . . {Feedback networks, e.g. hopfield nets, associative networks}                                                                                                                     | 5/027       | . . {Frames}                                                                                                                                                           |
| 3/0454      | . . . {using a combination of multiple neural nets}                                                                                                                                     | 5/04        | . Inference methods or devices                                                                                                                                         |
| 3/0463      | . . . {Neocognitrons}                                                                                                                                                                   | 5/041       | . . {Abduction}                                                                                                                                                        |
| 3/0472      | . . . {using probabilistic elements, e.g. p-rams, stochastic processors}                                                                                                                | 5/042       | . . {Backward inferencing}                                                                                                                                             |
| 3/0481      | . . . {Non-linear activation functions, e.g. sigmoids, thresholds}                                                                                                                      | 5/043       | . . {Distributed expert systems; Blackboards}                                                                                                                          |
| 3/049       | . . . {Temporal neural nets, e.g. delay elements, oscillating neurons, pulsed inputs}                                                                                                   | 5/045       | . . {Explanation of inference steps}                                                                                                                                   |
| 3/06        | . . Physical realisation, i.e. hardware implementation of neural networks, neurons or parts of neurons                                                                                  | 5/046       | . . {Forward inferencing; Production systems}                                                                                                                          |
|             |                                                                                                                                                                                         | 5/047       | . . . {Pattern matching networks; RETE networks}                                                                                                                       |
| 3/061       | . . . {using biological neurons, e.g. biological neurons connected to an integrated circuit}                                                                                            | 5/048       | . . {Fuzzy inferencing}                                                                                                                                                |
| 3/063       | . . . using electronic means                                                                                                                                                            | <b>7/00</b> | <b>Computer systems based on specific mathematical models</b>                                                                                                          |
| 3/0635      | . . . . {using analogue means}                                                                                                                                                          | 7/005       | . {Probabilistic networks}                                                                                                                                             |
| 3/067       | . . . using optical means                                                                                                                                                               | 7/02        | . using fuzzy logic (computer systems based on biological models <a href="#">G06N 3/00</a> ; computer systems using knowledge-based models <a href="#">G06N 5/00</a> ) |
| 3/0675      | . . . . {using electro-optical, acousto-optical or opto-electronic means}                                                                                                               | 7/023       | . . {Learning or tuning the parameters of a fuzzy system}                                                                                                              |
| 3/08        | . . Learning methods                                                                                                                                                                    | 7/026       | . . {Development tools for entering the parameters of a fuzzy system}                                                                                                  |
| 3/082       | . . . {modifying the architecture, e.g. adding or deleting nodes or connections, pruning}                                                                                               | 7/04        | . . Physical realisation                                                                                                                                               |

- 7/043 . . . {Analogue or partially analogue implementation}
- 7/046 . . . {Implementation by means of a neural network (neural networks using fuzzy logic [G06N 3/0436](#))}
- 7/06 . . Simulation on general purpose computers
- 7/08 . using chaos models or non-linear system models
- 10/00 Quantum computers, i.e. computer systems based on quantum-mechanical phenomena**
- 20/00 Machine learning**
  - WARNING**

Group [G06N 20/00](#) is impacted by reclassification into groups [G06N 20/10](#) and [G06N 20/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.
- 20/10 . using kernel methods, e.g. support vector machines [SVM]
  - WARNING**

Group [G06N 20/10](#) is incomplete pending reclassification of documents from group [G06N 20/00](#).

Groups [G06N 20/00](#) and [G06N 20/10](#) should be considered in order to perform a complete search.
- 20/20 . Ensemble learning
  - WARNING**

Group [G06N 20/20](#) is incomplete pending reclassification of documents from group [G06N 20/00](#).

Groups [G06N 20/00](#) and [G06N 20/20](#) should be considered in order to perform a complete search.
- 99/00 Subject matter not provided for in other groups of this subclass**
- 99/007 . {Molecular computers, i.e. using inorganic molecules (using biomolecules [G06N 3/002](#))}