

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.

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|-------------|---|-------------|--|
| 3/00 | Computer systems based on biological models | 3/084 | . . . {Back-propagation} |
| 3/002 | . {Biomolecular computers, i.e. using biomolecules, proteins, cells (using DNA G06N 3/123 ; using neurons G06N 3/061)} | 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 | 5/00 | Computer systems using knowledge-based models |
| 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 | 7/00 | Computer systems based on specific mathematical models |
| 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 G06N 3/00 ; computer systems using knowledge-based models G06N 5/00) |
| 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 |

G06N

- 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](#))}