

# 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

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| <p><b>3/00</b> <b>Computer systems based on biological models</b><br/>(analogue computers simulating functional aspects of living beings <a href="#">G06G 7/60</a>)</p> <p>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>)}</p> <p>3/004 . {Artificial life, i.e. computers simulating life}</p> <p>3/006 . . {based on simulated virtual individual or collective life forms, e.g. single "avatar", social simulations, virtual worlds (computer games <a href="#">A63F 13/00</a>; medical simulations <a href="#">G06F 19/00</a>; information retrieval <a href="#">G06F 17/30873</a>; image processing <a href="#">G06T</a>; telecommunication protocols <a href="#">H04L 29/06034</a>)}</p> <p>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 (toys or dolls <a href="#">A63H 3/00</a>; industrial robot control <a href="#">G05B 19/00</a>, <a href="#">B25J 9/00</a>; artificial neural networks <a href="#">G06N 3/00</a>; rule based artificial intelligence <a href="#">G06N 5/00</a>)}</p> <p>3/02 . using neural network models (for adaptive control <a href="#">G05B 13/00</a>; for image pattern matching <a href="#">G06K 9/00</a>; for image data processing <a href="#">G06T 1/20</a>; for phonetic pattern matching <a href="#">G10L 15/16</a>)</p> <p>3/04 . . Architectures, e.g. interconnection topology</p> <p>3/0409 . . . {Adaptive Resonance Theory [ART] networks}</p> <p>3/0418 . . . {using chaos or fractal principles}</p> <p>3/0427 . . . {in combination with an expert system}</p> <p>3/0436 . . . {in combination with fuzzy logic}</p> <p>3/0445 . . . {Feedback networks, e.g. hopfield nets, associative networks}</p> <p>3/0454 . . . {using a combination of multiple neural nets}</p> <p>3/0463 . . . {Neocognitrons}</p> <p>3/0472 . . . {using probabilistic elements, e.g. p-rams, stochastic processors}</p> <p>3/0481 . . . {Non-linear activation functions, e.g. sigmoids, thresholds}</p> <p>3/049 . . . {Temporal neural nets, e.g. delay elements, oscillating neurons, pulsed inputs}</p> <p>3/06 . . Physical realisation, i.e. hardware implementation of neural networks, neurons or parts of neurons</p> <p>3/061 . . . {using biological neurons, e.g. biological neurons connected to an integrated circuit}</p> <p>3/063 . . . using electronic means</p> <p>3/0635 . . . . {using analogue means}</p> | <p>3/067 . . . using optical means</p> <p>3/0675 . . . . {using electro-optical, acousto-optical or opto-electronic means}</p> <p>3/08 . . Learning methods</p> <p>3/082 . . . {modifying the architecture, e.g. adding or deleting nodes or connections, pruning}</p> <p>3/084 . . . {Back-propagation}</p> <p>3/086 . . . {using evolutionary programming, e.g. genetic algorithms}</p> <p>3/088 . . . {Non-supervised learning, e.g. competitive learning}</p> <p>3/10 . . Simulation on general purpose computers</p> <p>3/105 . . . {Shells for specifying net layout}</p> <p>3/12 . using genetic models</p> <p>3/123 . . {DNA computers, i.e. information processing using biological DNA}</p> <p>3/126 . . {Genetic algorithms, i.e. information processing using digital simulations of the genetic system}</p> <p><b>5/00 Computer systems utilising knowledge based models</b></p> <p>5/003 . {Dynamic search techniques, heuristics, branch-and-bound (<a href="#">G06N 5/046</a> take precedence; for optimisation <a href="#">G06Q 10/04</a>)}</p> <p>5/006 . . {Automatic theorem proving}</p> <p>5/02 . Knowledge representation {(<a href="#">G06N 5/04</a> takes precedence)}</p> <p>5/022 . . {Knowledge engineering, knowledge acquisition}</p> <p>5/025 . . . {Extracting rules from data (learning in general <a href="#">G06F 15/18</a>)}</p> <p>5/027 . . {Frames}</p> <p>5/04 . Inference methods or devices</p> <p>5/041 . . {Abduction}</p> <p>5/042 . . {Backward inferencing}</p> <p>5/043 . . {Distributed expert systems, blackboards}</p> <p>5/045 . . {Explanation of inference steps}</p> <p>5/046 . . {Forward inferencing, production systems}</p> <p>5/047 . . . {Pattern matching networks, RETE}</p> <p>5/048 . . {Fuzzy inferencing}</p> <p><b>7/00 Computer systems based on specific mathematical models</b></p> <p>7/005 . {Probabilistic networks}</p> <p>7/02 . using fuzzy logic (<a href="#">G06N 3/00</a>, <a href="#">G06N 5/00</a> take precedence; for adaptive control <a href="#">G05B 13/00</a>)</p> |
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## G06N

- 7/023 . . {Learning or tuning the parameters of a fuzzy system}
- 7/026 . . {Development tools for entering the parameters of a fuzzy system}
- 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

### **99/00 Subject matter not provided for in other groups of this subclass**

- 99/002 . {Quantum computers, i.e. information processing by using quantum superposition, coherence, decoherence, entanglement, nonlocality, teleportation}
- 99/005 . {Learning machines, i.e. computer in which a programme is changed according to experience gained by the machine itself during a complete run (neural networks [G06N 3/02](#); knowledge based models [G06N 5/00](#); fuzzy logic systems [G06N 7/02](#); adaptive control systems [G05B 13/00](#))}
- 99/007 . {Molecular computers, i.e. using inorganic molecules (using biomolecules [G06N 3/002](#))}