

Chapter 1 : Evolutionary Intelligence Empowering Conscious Change

Evolutionary Intelligence is the place to discover advances in the field of evolutionary intelligence. The journal is devoted to the timely publication and dissemination of both the theoretical and practical aspects of population-based searches for artificial intelligence.

This article was submitted to Psychopathology, a section of the journal *Frontiers in Psychology*. The use, distribution or reproduction in other forums is permitted, provided the original author s or licensor are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms. This article has been cited by other articles in PMC. One of the great joys of being a scientist is the hunt for an elusive signal within the noise of data, opinions, biases, and other human foibles associated with the pursuit of knowledge. However, it also reflects an underlying signal that bears further scrutiny, in spite of our instinct to discard a flawed image of reality. Many thinkers and researchers have found that creativity and madness seem somehow to be intertwined, but the signal is weak, the image blurry, and the propensity toward romantic stereotypes is high. And yet, as scientists, we can only follow the data, trying to make sense of what it tells us. So, rather than entertain the premise outright let me take you on a bit of a journey which will end back at madness, I promise. What if evolutionary processes selected for two types of reasoning? These problems are more transient and involve contingencies that may or may not persist over time—like figuring out how to get into your car, having locked your keys inside. They are rule based, deterministic, and the cause leads naturally to effect. This reasoning is probabilistic, involves approximation, and importantly guessing. Both methods are adaptive: Kanazawa views intelligence incorrectly , the pinnacle of deductive reasoning, as THE domain-specific adaptation to solving novel problems in the environment. However, it is my contention that intelligence and creativity occupy two extremes of a dichotomy: Creative reasoning solves the minority of problems that are unforeseen and yet of high adaptability: The fire is now spreading to the dry underbrush. What should I do? In this conceptualization, creativity is an evolved cognitive mechanism to abstract, to synthesize, to solve non-recurrent problems in the environment. Finally, intelligence should be seen as a rather stable evolved mechanism over the last 1. Intelligence may not be evolutionarily novel, but creativity certainly is. Perhaps the most parsimonious theory of creative cognition to incorporate evolutionary principles is that of Blind Variation and Selective Retention BVSR Campbell, In contrast, sighted ideas are guided by prior applicable ideas a. In the next step, we can now synthesize the cognitive systems with hypothesized neural mechanisms: The interaction of explicit and implicit systems can be seen to form the basis of effective, adaptive problem solving within an organism required to solve both common and novel problems in the world. But what of madness? This is where we really must stretch our thinkers to hypothesize where things might go awry, as they always do, out in the messy world of biological beings. Two competing mechanisms are at play in the human brain, one driving toward abstraction, the other toward certainty. At the far extreme of one end of this highly adaptive bell curve resides psychosis:

Chapter 2 : Evolutionary Intelligence

Evolutionary Intelligence is the place to discover advances in the field of evolutionary intelligence. The journal is devoted to the timely publication and dissemination of both the theoretical and practical aspects of population-based searches for artificial intelligence. Among the techniques.

Implementation[edit] Step One: Generate the initial population of individuals randomly. First generation Step Two: Evaluate the fitness of each individual in that population time limit, sufficient fitness achieved, etc. Repeat the following regenerational steps until termination: Select the best-fit individuals for reproduction. Parents Breed new individuals through crossover and mutation operations to give birth to offspring. Evaluate the individual fitness of new individuals. Replace least-fit population with new individuals. Types[edit] Similar techniques differ in genetic representation and other implementation details, and the nature of the particular applied problem. Genetic algorithm “ This is the most popular type of EA. One seeks the solution of a problem in the form of strings of numbers traditionally binary, although the best representations are usually those that reflect something about the problem being solved , [2] by applying operators such as recombination and mutation sometimes one, sometimes both. This type of EA is often used in optimization problems. Another name for it is fetura, from the Latin for breeding. Evolutionary programming “ Similar to genetic programming, but the structure of the program is fixed and its numerical parameters are allowed to evolve. Gene expression programming “ Like genetic programming, GEP also evolves computer programs but it explores a genotype-phenotype system, where computer programs of different sizes are encoded in linear chromosomes of fixed length. Evolution strategy “ Works with vectors of real numbers as representations of solutions, and typically uses self-adaptive mutation rates. Differential evolution “ Based on vector differences and is therefore primarily suited for numerical optimization problems. Neuroevolution “ Similar to genetic programming but the genomes represent artificial neural networks by describing structure and connection weights. The genome encoding can be direct or indirect. Learning classifier system “ Here the solution is a set of classifiers rules or conditions. Initially, classifiers were only binary, but now include real, neural net, or S-expression types. Fitness is typically determined with either a strength or accuracy based reinforcement learning or supervised learning approach. Comparison to biological processes[edit] A possible limitation[according to whom? In nature, the fertilized egg cell undergoes a complex process known as embryogenesis to become a mature phenotype. This indirect encoding is believed to make the genetic search more robust i. And gene expression programming successfully explores a genotype-phenotype system, where the genotype consists of linear multigenic chromosomes of fixed length and the phenotype consists of multiple expression trees or computer programs of different sizes and shapes. Primarily suited for combinatorial optimization and graph problems. The runner-root algorithm RRA is inspired by the function of runners and roots of plants in nature [8] Artificial bee colony algorithm “ Based on the honey bee foraging behaviour. Primarily proposed for numerical optimization and extended to solve combinatorial, constrained and multi-objective optimization problems. Bees algorithm is based on the foraging behaviour of honey bees. It has been applied in many applications such as routing and scheduling. Cuckoo search is inspired by the brooding parasitism of the cuckoo species. Particle swarm optimization “ Based on the ideas of animal flocking behaviour. Also primarily suited for numerical optimization problems. Other population-based metaheuristic methods[edit] Hunting Search “ A method inspired by the group hunting of some animals such as wolves that organize their position to surround the prey, each of them relative to the position of the others and especially that of their leader. It is a continuous optimization method [9] adapted as a combinatorial optimization method. Rather it uses a simple performance-oriented method, based on the update of the search dimensionality ratio SDR parameter at each iteration. This is especially useful for multimodal optimization. This algorithm is suitable for combinatorial optimization as well as parameter optimization. Gaussian adaptation “ Based on information theory. Used for maximization of manufacturing yield, mean fitness or average information. See for instance Entropy in thermodynamics and information theory. Emphasizes the exploitation of problem-specific knowledge, and tries to orchestrate local and global search in a synergistic

way.

Chapter 3 : The Essence of Human Nature | Evolutionary Intelligence

The evolution of human intelligence is closely tied to the evolution of the human brain and to the origin of language. The timeline of human evolution spans approximately 7 million years, [1] from the separation of the genus Pan until the emergence of behavioral modernity by 50,000 years ago.

Submit manuscript at <https://www.mdpi.com>: Swarm intelligence Swarm knowledge is the aggregate conduct of decentralized, self-sorted out frameworks, normal or counterfeit. The idea is utilized in deal with manmade brainpower. Frameworks comprise regularly of a populace of basic operators or boids associating by regional standards with each other and with their surroundings. The motivation frequently originates from nature, particularly organic frameworks. The operators take after exceptionally basic standards, and albeit there is no unified control structure directing how singular specialists ought to act, neighbourhood, and to a certain degree irregular, communications between such specialists lead to the development of "smart" worldwide conduct, obscure to the individual operators. Cases in characteristic frameworks of SI incorporate burrowing little creature settlements, winged animal rushing, creature grouping, bacterial development, fish educating and microbial insight. Evolutionary computation Developmental calculation is a sub-field of computerized reasoning that can be characterized by the kind of calculations is simply called Evolutionary computation. Transformative calculation utilizes iterative advancement, for example, development or improvement in a populace. This populace is then chosen in a guided irregular inquiry utilizing parallel preparing to accomplish the wanted end. Such procedures are frequently propelled by natural components of development. There are so many applications of evolutionary computation in chemistry field. Evolutionary science It is the branch of science in which advanced change in heritable attributes of organic populaces over progressive generations. Evolutionary procedures offer ascent to differing qualities at each level of natural association, including the levels of species, individual living beings, and molecules. There are several Evolutionary science Journals mentioned below. The Science of Mass Extinction, Controversies in the evolutionary social sciences: A new approach to violent crime, Genetic programming theory and practice XI Evolutionary algorithm In Evolutionary computation, a evolutionary algorithm is a subset of developmental reckoning, a bland populace based metaheuristic streamlining calculation. An evolutionary algorithm utilizes systems roused by organic development, for example, propagation, change, recombination, and determination. Applicant answers for the improvement issue assume the part of people in a populace, and the wellness capacity decides the nature of the arrangements. There are several highly accessed evolutionary algorithm Journals are prescribed below. Evolutionary Optimisation Information of various answers for an advancement undertaking is particularly useful in building, when because of physical imperatives, the best results may not generally be feasible. In such a situation, if various arrangements are known, the execution can be immediately changed to another arrangement and still acquire an ideal framework execution. Different arrangements could likewise be examined to find concealed properties, which makes them high-performing. There are several Evolutionary Optimisation Journals mentioned below. Artificial intelligence Artificial intelligence is making a computer that thinks like a human to be able to learn and to have "new ideas". Artificial intelligence is not just knowing more information. It is to build a machine that can act as if it were smart and seem more human. This is called the Turing test. For this situation, it is the investigation of mental procedures through the utilization of PC models. The subject of what it intends to act naturally mindful or having. Machine Learning Machine learning is a subfield of computer science. That advanced from the investigation of example acknowledgment and computational learning hypothesis in counterfeit intelligence. Machine learning investigates the development and investigation of calculations that can gain from and make forecasts on data. Such calculations work by building a model from sample inputs to make information driven expectations or decisions, instead of taking after entirely static system guidelines. The Induction of Scheduling Knowledge, A review of machine learning in scheduling, Evaluating machine learning models for engineering problems. Artificial neural networks Artificial Neural Network systems are a group of factual learning models motivated by natural neural systems the focal sensory systems of creatures, specifically the and are utilized to gauge or

surmised capacities that can rely on upon a substantial number of inputs and are for the most part obscure. Manufactured neural systems are by and large displayed as frameworks of interconnected "neurons" which send messages to one another. The associations have numeric weights that can be tuned taking into account experience, making neural nets versatile to inputs and fit for learning. Multi Objective Programming Multi Objective Programming is a region of different criteria choice making, that is concerned with numerical enhancement issues including more than one target capacity to be streamlined all the while. Multi-target advancement has been connected in numerous fields of science, including designing, financial aspects and logistics see the area on applications for point by point illustrations where ideal choices should be taken in the vicinity of exchange offs between two or additionally clashing goals. There are several, Multi Objective Programming Journals mentioned below. Relationship and counterexamples, Optimality conditions for directionally differentiable multi-objective programming problems, An analytic network process-mixed integer multi-objective programming model for partner selection in agile supply chains, Artificial immune system based neural networks for solving multi-objective programming problems, A new multi-objective programming scheme for topology optimization of compliant mechanisms, Determination of locations for static transfer switches using Genetic Algorithms and fuzzy multi-objective programming. It is assumed that a coveted aggregate conduct rises up out of the cooperations between the robots and connections of robots with nature. This methodology developed on the field of simulated swarm insight, and in addition the organic investigations of creepy crawlies, ants and different fields in nature, where swarm conduct happens. There are several swarm robotics journals are mentioned below. Ontology Engineering Ontology engineering and data science is a field which mulls over the strategies and systems for building ontologies: An expansive scale representation of theoretical ideas , for example, activities, time, physical articles and convictions would be a sample of ontological building. Ontology engineering goes for making unequivocal the information contained inside of programming applications, and inside of undertakings and business methods for a specific area. Cosmology building offers a bearing towards unravelling the between operability issues realized by semantic obstructions, i. Philosophy designing is a situated of undertakings identified with the advancement of ontologies for a specific area. There are several, Ontology Engineering Journals mentioned below. Handover In cell information transfers , the term handover or handoff alludes to the procedure of exchanging a continuous call or information session from one channel associated with the centre system to another channel. In satellite interchanges it is the procedure of exchanging satellite control obligation starting with one earth station then onto the next without misfortune or intrusion of administration. There are several Handover Journals mentioned below. Evolution of social network Social Network is a social structure made up of an arrangement of social performing artists, for example, people or associations and an arrangement of the dyadic ties between these performers. The interpersonal organization point of view gives an arrangement of strategies to breaking down the structure of entire social elements and additionally a mixed bag of hypotheses clarifying the examples saw in these structures. The investigation of these structures utilizes informal community examination to distinguish neighbourhood and worldwide examples, find compelling substances, and analyse system progress. Informal communities and the investigation of them is an inalienably interdisciplinary scholastic field which rose up out of social brain research , humanism , insights, and chart hypothesis. There are several evolution of social network journals are prescribed below. Hybrid soft computing In software engineering, soft processing is the utilization of inaccurate answers for computationally hard undertakings, for example, the arrangement of NP-complete issues, for which there is no known calculation that can register an accurate arrangement in polynomial time. Delicate registering varies from traditional processing in that, dissimilar to hard figuring , it is tolerant of imprecision , instability, fractional truth, and close estimation. In actuality, the good example for delicate figuring is the human personality. There are several, Hybrid soft computing Journals mentioned below.

Chapter 4 : Evolutionary algorithm - Wikipedia

EVOLUTIONARY INTELLIGENCE THE DNA OF BETTER DECISIONS Through the use of Sentient's massively scaled computation infrastructure and advancements in evolutionary computation, we have created an intelligent platform called LEAF, Learning Evolutionary Algorithm Framework.

Print Article I write to request your support on a petition for rehearing and rehearing en banc at the Federal Circuit in Evolutionary Intelligence v. Appellant Evolutionary Intelligence has secured a day extension to file the combined petition, now due April 19, Amicus briefs in support of the petition are due on May 3, This is a marked departure from the historical analysis of patent claims. Disturbingly, this process can be used to invalidate any patent because it is based on broad generalities and assumptions rather than precisely defined and examined claims. It defies common sense. Here, neither the district court nor the Federal Circuit considered a single claim as a whole. Both courts cherry picked words out of context while ignoring specifically claimed structure, organization, and combinations. And, ignoring the specification entirely. Instead, the courts relied on unfounded, extrinsic analogies to libraries, baristas and dinosaur toys with red stickers. In contrast, the earlier PTAB final decision construed ten claim terms, and no party disputed those constructions. Here the claims are directed to selecting and sorting information by user interest or subject matter, a longstanding activity of libraries and other human enterprises. Whether analyzed individually or as an ordered combination the claims recite those conventional elements at too high a level of generality to constitute an inventive concept. Nor does it resolve Alice step two, especially when all inventions result from old elements. Wells Fargo Bank, Nat. The Evolutionary Intelligence Patents U. These are no capped-fee, skimpy specification patents. The invention is disclosed and claimed in an exacting page description with more than enumerated elements. Thirty-one detailed drawings of flow charts and diagrams depict the invention. These are seminal patents in the use of the mobile Web, and many leading technology companies have cited them, including Apple, Microsoft, Hewlett Packard, and IBM. The claims are similarly detailed and require structure that is specifically arranged. Neither court analyzed, or even considered this claimed structure. While Rule 12 invalidation may be appropriate in extreme cases, the claims must always be properly considered. However, by applying generalized facts, outside of the pleadings, and failing to properly consider claim limitations, the courts allowed appellees to improperly use Rule 12 as a sword and a shield: This conflict can no longer be ignored. Conclusion The law is long settled that patent claims define the metes and bounds of an invention. By its own understanding? That is not the law, but that is what happened here and in so many other cases. Software patents are one of the engines of innovation in America. They enable inventors, small companies, and large enterprises alike to protect inventions and to bring them to market. The defective misapplication of Alice must be redressed to end the continued baseless invalidation of valid patents. If not here and now, when and at what cost to American innovation? I hope you will join our efforts to correct the current imbalance by drafting an amicus brief in support of Evolutionary Intelligence on combined petition for rehearing at the Federal Circuit. If you have questions or would like further information, please contact me. Of the 8 IPR challenges, only one was instituted, and all claims survived. What technical field is in danger of preemption once the patent has survived 8 IPR challenges and fifteen pieces of prior art? The patent claims and specification resolve those court-imposed vagaries but were not properly considered. Addy has handled more than 30 cases before trial courts and argued more than 40 appeals to the Federal Circuit. She has held leadership positions at several AmLaw firms and is a recipient of many awards and honors. Addy has testified before Congress to address issues relating to the Federal Circuit and the state of patent law. Addy is also a founder of the Richard Linn American Inn of Court, which is directed to intellectual property, and served as its first president. For more information, or to contact Meredith, please visit her firm profile page. The pages, articles and comments on IPWatchdog. Discuss this There are currently 3 Comments comments. Anon2 March 31, It is as though someone were telling you the best way to see is to first blur your vision as if incorrect or unclear perception were informative and then take a real look with unobscured eyes, and that the best way to hear is to cover or muffle your ears first and then have a real listen through your unblocked ears.

What kind of legal test asks one to try to first make a tentative conclusion without all the information and without a proper analysis, and then re-visit the same issue using proper analysis and information? No objective conclusion arrived at by a process of logic was ever served by prefacing its employment with vague and unclear presumptions and ill formed premises prior to its full and proper engagement. As I see it, judges, be they on the SCOTUS bench or any lower crouching tiger position do not want to do any hard work of actually understanding the invention. This is a very sad state of affairs we are all in. Gene April 3, 2:

Chapter 5 : Evolution of human intelligence - Wikipedia

The evolution of hominid intelligence can be traced over its course for the past 10 million years, and attributed to specific environmental challenges. It is a misunderstanding of evolutionary.

Intelligence , Archaic humans , Behavioral modernity , and Early human migration Around , years ago, Homo sapiens first appeared in East Africa. It is unclear to what extent these early modern humans had developed language , music , religion etc. They spread throughout Africa over the following approximately 50, years. This reduced the human population to less than 10, breeding pairs in equatorial Africa, from which all modern humans are descended. Being unprepared for the sudden change in climate, the survivors were those intelligent enough to invent new tools and ways of keeping warm and finding new sources of food for example, adapting to ocean fishing based on prior fishing skills used in lakes and streams that became frozen. Rapidly increasing sophistication in tool-making and behaviour is apparent from about 80, years ago, and the migration out of Africa follows towards the very end of the Middle Paleolithic , some 60, years ago. Fully modern behaviour, including figurative art , music , self-ornamentation, trade , burial rites etc. These group dynamics relate to Theory of Mind or the ability to understand the thoughts and emotions of others, though Dunbar himself admits in the same book that it is not the flocking itself that causes intelligence to evolve as shown by ruminants. In addition, there is evidence to suggest that the success of groups is dependent on their size at foundation, with groupings of around being particularly successful, potentially reflecting the fact that communities of this size strike a balance between the minimum size of effective functionality and the maximum size for creating a sense of commitment to the community. As evidence, Dunbar cites a relationship between neocortex size and group size of various mammals. The exceptions to the predictions of the social intelligence hypothesis, which that hypothesis has no predictive model for, are successfully predicted by diets that are either nutritious but scarce or abundant but poor in nutrients. Another hypothesis is that it is actually intelligence that causes social relationships to become more complex, because intelligent individuals are more difficult to learn to know. Social Exchange is a vital adaptation that evolved in social species and has become exceptionally specialized in humans. This adaptation will develop by natural selection when two parties can make themselves better off than they were before by exchanging things one party values less for things the other party values for more. However, selection will only pressure social exchange when both parties are receiving mutual benefits from their relative situation; if one party cheats the other by receiving a benefit while the other is harmed, then selection will stop. Consequently, the existence of cheatersâ€”those who fail to deliver fair benefitsâ€”threatens the evolution of exchange. Using evolutionary game theory, it has been shown that adaptations for social exchange can be favored and stably maintained by natural selection, but only if they include design features that enable them to detect cheaters, and cause them to channel future exchanges to reciprocators and away from cheaters. Thus, humans use social contracts to lay the benefits and losses each party will be receiving if you accept benefit B from me, then you must satisfy my requirement R. Humans have evolved an advanced cheater detection system, equipped with proprietary problem-solving strategies that evolved to match the recurrent features of their corresponding problem domains. Not only do humans need to determine that the contract was violated, but also if the violation was intentionally done. Therefore, systems are specialized to detect contract violations that imply intentional cheating. For example, if only individuals capable of remembering what they had agreed to were punished for breaking agreements, evolution would have selected against the ability to remember what one had agreed to. Sexual selection in human evolution This model, which invokes sexual selection , is proposed by Geoffrey Miller who argues that human intelligence is unnecessarily sophisticated for the needs of hunter-gatherers to survive. He argues that the manifestations of intelligence such as language, music and art did not evolve because of their utilitarian value to the survival of ancient hominids. Rather, intelligence may have been a fitness indicator. Hominids would have been chosen for greater intelligence as an indicator of healthy genes and a Fisherian runaway positive feedback loop of sexual selection would have led to the evolution of human intelligence in a relatively short period. This means that less attractive individuals will find other less attractive individuals to mate with. If

attractive traits are good fitness indicators, this means that sexual selection increases the genetic load of the offspring of unattractive individuals. Without sexual selection, an unattractive individual might find a superior mate with few deleterious mutations, and have healthy children that are likely to survive. With sexual selection, an unattractive individual is more likely to have access only to an inferior mate who is likely to pass on many deleterious mutations to their joint offspring, who are then less likely to survive. That human female breasts typical mammalian breast tissue is small [22] are found sexually attractive by many men is in agreement with sexual selection acting on human females secondary sexual characteristics. Sexual selection for intelligence and judging ability can act on indicators of success, such as highly visible displays of wealth. Growing human brains require more nutrition than brains of related species of ape. It is possible that for females to successfully judge male intelligence, they must be intelligent themselves. This could explain why despite the absence of clear differences in intelligence between males and females on average, there are clear differences between male and female propensities to display their intelligence in ostentatious forms. While sexually selected ornaments such as peacock feathers and moose antlers develop either during or after puberty, timing their costs to a sexually mature age, human brains expend large amounts of nutrients building myelin and other brain mechanisms for efficient communication between the neurons early in life. These critics argue that human intelligence evolved by natural selection citing that unlike sexual selection, natural selection have produced many traits that cost the most nutrients before puberty including immune systems and accumulation and modification for increased toxicity of poisons in the body as a protective measure against predators. Thus, widespread, virulent, and archaic infections are greatly involved in natural selection for cognitive abilities. People infected with parasites may have brain damage and obvious maladaptive behavior in addition to visible signs of disease. Smarter people can more skillfully learn to distinguish safe non-polluted water and food from unsafe kinds and learn to distinguish mosquito infested areas from safe areas. Smarter people can more skillfully find and develop safe food sources and living environments. When people search for mates based on their success, wealth, reputation, disease-free body appearance, or psychological traits such as benevolence or confidence; the effect is to select for superior intelligence that results in superior disease resistance. Ecological dominance-social competition model[edit] A predominant model describing the evolution of human intelligence is ecological dominance-social competition EDSC, [27] explained by Mark V. Geary and Carol V. Ward based mainly on work by Richard D. According to the model, human intelligence was able to evolve to significant levels because of the combination of increasing domination over habitat and increasing importance of social interactions. As a result, the primary selective pressure for increasing human intelligence shifted from learning to master the natural world to competition for dominance among members or groups of its own species. As advancement, survival and reproduction within an increasing complex social structure favored ever more advanced social skills, communication of concepts through increasingly complex language patterns ensued. Since competition had shifted bit by bit from controlling "nature" to influencing other humans, it became of relevance to outmaneuver other members of the group seeking leadership or acceptance, by means of more advanced social skills. A more social and communicative person would be more easily selected. Intelligence dependent on brain size[edit] Human intelligence is developed to an extreme level that is not necessarily adaptive in an evolutionary sense. Firstly, larger-headed babies are more difficult to give birth to and large brains are costly in terms of nutrient and oxygen requirements. Since, scientists have been evaluating genomic data on gene variants thought to influence head size, and have found no evidence that those genes are under strong selective pressure in current human populations. Increased brain size in humans may allow for greater capacity for specialized expertise. The group benefits of intelligence including language, the ability to communicate between individuals, the ability to teach others, and other cooperative aspects have apparent utility in increasing the survival potential of a group. Nutritional status[edit] Higher cognitive functioning develops better in an environment with adequate nutrition, [32] and diets deficient in iron, zinc, protein, iodine, B vitamins, omega 3 fatty acids, magnesium and other nutrients can result in lower intelligence [33] [34] either in the mother during pregnancy or in the child during development. While these inputs did not have an effect on the evolution of intelligence they do govern its expression. A higher intelligence could be a signal that an individual comes from and lives in a physical and social environment

where nutrition levels are high, whereas a lower intelligence could imply a child, its mother, or both, come from a physical and social environment where nutritional levels are low. Pevic emphasizes the contribution of nutritional factors, especially meat and shellfish consumption, to elevations of dopaminergic activity in the brain, which may have been responsible for the evolution of human intelligence since dopamine is crucial to working memory, cognitive shifting, abstract, distant concepts, and other hallmarks of advanced intelligence.

Chapter 6 : The evolution of intelligence, and why our brains have shrunk

Nature-inspired optimization algorithms, especially evolutionary computation-based and swarm intelligence-based algorithms are being used to solve a variety of optimization problems.

It was shaped during more than two million years of human history and contains the survival experience of our species¹. Evolution has equipped humans, like any other species, with the necessary capability to survive. The evolutionary development of human nature involved the body as well as the psyche. The human brain, mainly the older midbrain, contains certain adaptive responses and life patterns which are specifically designed for survival. Our history goes back to the time when our ancestors survived as hunters and gatherers. They confronted the forces of nature in search of shelter and food, and survival was the order of the day. It was then that our basic anatomy, behavior and psychology were formed. These features and abilities entered our genetic make-up and have stayed with us ever since. Like that of all other living organisms, our nature was formed by the adaptive forces of evolution. For that, we possess the same natural powers to adapt and survive that we admire in animals. Formed by evolutionary process, our nature holds the biological intelligence of life. Evolution shapes the organism for survivalâ€”by making sure that the organism is matched to its environment and its needs are met. Evolution secured our survival and we made out rather well. Nature gave us a unique brain. Other species are bigger, stronger or faster. We, on the other hand, are smarter. Rather than developing the physical advantages of size, strength or speed, we started out with a larger, more capable brain. This added other advantages. All other forms of life are fixed to a particular environment or specific routine; we are not. In fact, the enlarged brain makes it possible to manipulate and change the environment. The evolution of other species concentrated primarily on the formation of body and anatomy. The demands on our survival were different. Relative size and lack of relevant physical features required additional capabilities. This made our evolution different from that of other species. Human survival depended foremost on the evolution of the brain rather than that of the body. Our specific survival advantage as a species lies, therefore, in our behavior and psychologyâ€”the human psyche.

Chapter 7 : International Journal of Swarm Intelligence and Evolutionary Computation- Open Access Journal

Sequence labeling is an interesting classification domain where, like normal classification, every input has a class label, but unlike normal classification, prediction of an input's label may.

Chapter 8 : Iq - Evolutionary Intelligence - racedaydvl.com Music

NOTE: This disposition is nonprecedential. United States Court of Appeals for the Federal Circuit _____ EVOLUTIONARY INTELLIGENCE LLC, Plaintiff-Appellant v.

Chapter 9 : Welcome | Computational Evolutionary Intelligence Lab

Evolutionary Intelligence empowers conscious change through personal development. We design and deliver embodied learning and development programs. The Evolutionary Intelligence Process is a process that takes us out of our heads and into our hearts and bodies.