

Reverse Engineering Mammalian Brains For Building Complex

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~~Reverse Engineering Mammalian Brains For~~

“ Reverse engineering the brain by mimicking the structure and function of neuronal ... The essence of this vision is to ‘ copy ’ the functional synaptic connectivity map of a mammalian neuronal network ...

~~Neuromorphic electronics based on copying and pasting the brain~~

Their question is, what if they reverse the pumps ... genetically transplant those outer-surface opsins into brain cells. This bit of engineering gave neuroscientists the ability to control ...

~~Can a Digital Reality Be Jacked Directly Into Your Brain?~~

Like the Space Shuttle Challenger disaster, like the Johnstown flood, and like that one scene at the beginning of Fight Club, this will be one for the engineering ethics text books. If this does ...

~~Ethics In Engineering: Volkswagen 's Diesel Fiasco~~

His team seeks to learn how to guide cellular assembly in the context of tissue engineering, and to understand what ... the formation and operation of neuronal circuits in the mammalian brain. These ...

~~Faculty Scholars Program~~

and mammals are not known to possess either of these." Through a series of essays, however, the researchers were able to ascertain that this complex was indeed running in reverse in cultured cells ...

~~How some tissues can 'breathe' without oxygen~~

“ Bioconservatives ” argue that it is morally wrong to postpone death by dramatically re-engineering ... brain; making brain cells young again might prevent new plaques forming but not ...

~~Can we live to 1000? The quest to cheat death is on.~~

Such efforts are an attempt to reverse the inability of mature mammalian heart muscle cells to proliferate. One of the interesting clinical trials reviewed involved giving cardiosphere-derived ...

~~Heart repair and regeneration after a heart attack: A review~~

An IIT team from the Department of Applied Mechanics and Department of Engineering Design attempts ... which has an impact on the brain and the central nervous system. This could reduce stress ...

~~Is there science in shirodhara~~

The 5th Annual LabRoots Cancer Research & Oncology Virtual Conference is now On-Demand! LabRoots invites research professionals, scientists, and clinicians to this premier online conference, making it ...

~~Cancer Research & Oncology 2017~~

As most types of vision loss including those from childhood blindness feature an undamaged visual cortex, a lot of the focus on restoring vision has consequently been on this part of the brain.

~~Seeking Enlightenment: The Quest To Restore Vision In Humans~~

Meditation has also been shown to help cultivate brain states that increase empathy. Created with Sketch. Some neuroscientists have advanced the concept of "mirror neurons " as a possible ...

~~Psychology Today~~

There is no cure for ALS and no effective treatment to halt or reverse disease progression ... healthy cells throughout our bodies, but in the brains of patients with these diseases it clumps ...

~~Detailed images of molecule associated with ALS could open door to therapies~~

Prof Rajnish Kumar of the Department of Chemical Engineering, IIT-M ... the National Gas Hydrate Programme has been racking its brains over how to get the gas out of the hydrates.

~~How to sequester carbon dioxide and produce natural gas~~

A new biotech startup with operations in Seattle and Durham, N.C., has launched with \$40 million in new funding and a leadership team peppered with veterans of Seattle cell therapy... Read More Univ.

~~Health/Life Sciences~~

Researchers at the USC Viterbi School of Engineering are using generative ... videos and photorealistic human faces—to improve brain-computer interfaces ... A new technique using electron ...

~~Sorted by popular~~

Stay on top of the latest market trends and economic insights with Axios Markets. Subscribe for free Brazil was also one of the nations that promised to end and reverse deforestation by 2030 during ...

~~Amazon deforestation in Brazil surges to worst in 15 years~~

For instance, at the MMI 2.5 alert threshold, the outcomes for a strike-slip or reverse crustal earthquake are similar whether 3D or point source representations are used, as long as the location ...

~~3D fault information improves alert accuracy for earthquake early warning~~

COE Biomedical and Chemical Engineering Grant Seuser, Southwest Research Institute CO2 to Fuel: Combining Reverse Water Gas Shift and Fischer Tropsch Synthesis into a Single Reactor The Brain Health ...

The neural control of sleep and wakefulness depends upon a complex and partially defined balance between subcortical excitatory and inhibitory populations in the brain. Wake-active neurons include hypocretin (Hcrt)-containing neurons in the lateral hypothalamus and noradrenergic neurons that make up the brainstem locus coeruleus (LC). Experimentally determining a causal role for these neurons in promoting and maintaining wakefulness has remained elusive using traditional pharmacological and electrical techniques due to their small size, unique morphology, and proximity to heterogeneous neuronal and non-neuronal cell types. The recent development of optogenetic technology provides a toolkit of genetically-encodable, millisecond timescale, stimulation and inhibition probes that can be targeted to specific cell types with no toxicity to the cells under investigation. This dissertation discusses the application of optogenetic tools to questions about sleep/wake circuitry and uses these tools to study Hcrt and LC neurons, both individually and in combination.

This book describes new theories and applications of artificial neural networks, with a special focus on answering questions in neuroscience, biology and biophysics and cognitive research. It covers a wide range of methods and technologies, including deep neural networks, large scale neural models, brain computer interface, signal processing methods, as well as models of perception, studies on emotion recognition, self-organization and many more. The book includes both selected and invited papers presented at the XXII International Conference on Neuroinformatics, held on October 12-16, 2020, Moscow, Russia.

This volume examines the latest scientific and technological developments likely to shape our post-human future. Using a multidisciplinary approach, the author argues that we stand at the precipice of an evolutionary change caused by genetic engineering and anatomically embedded digital and informational technologies. The author delves into current scientific initiatives that will lead to the emergence of super smart individuals with unique creative capacities. He draws on technology, psychology and philosophy to consider humans-as-they-are relative to autonomy, creativity, and their place in a future shared with 'post humans.' The author discusses the current state of bioethics and technology law, both which policymakers, beset by a torrent of revolutionary advances in bioengineering, are attempting to steer. Significantly, Carvalko addresses why we must both preserve the narratives that brought us to this moment and continue to express our humanity through, music, art, and literature, to ensure that, as a uniquely creative species, we don't simply vanish in the ether of an evolution brought about by our own technology.

Pratiyogita Darpan (monthly magazine) is India's largest read General Knowledge and Current Affairs Magazine. Pratiyogita Darpan (English monthly magazine) is known for quality content on General Knowledge and Current Affairs. Topics ranging from national and international news/ issues, personality development, interviews of examination toppers, articles/ write-up on topics like career, economy, history, public administration, geography, polity, social, environment, scientific, legal etc, solved papers of various examinations, Essay and debate contest, Quiz and knowledge testing features are covered every month in this magazine.

As computers continue to remain essential tools for the pursuit of physics, medicine, economics, social sciences, and more, supercomputers are proving that they can further extend and greatly enhance as-of-yet undiscovered knowledge and solve the world's most complex problems. As these instruments continue to lead to groundbreaking discoveries and breakthroughs, it is imperative that research remains up to date with the latest findings and uses. The Handbook of Research on Methodologies and Applications of Supercomputing is a comprehensive and critical reference book that provides research on the latest advances of control flow and dataflow supercomputing and highlights selected emerging big data applications needing high acceleration and/or low power. Consequently, this book advocates the need for hybrid computing, where the control flow part represents the host architecture and dataflow part represents the acceleration architecture. These issues cover the initial eight chapters. The remaining eight chapters cover selected modern applications that are best implemented on a hybrid computer, in which the transactional parts (serial code) are implemented on the control flow part and the loops (parallel code) on the dataflow part. These final eight chapters cover two major application domains: scientific computing and computing for digital economy. This book offers applications in marketing, medicine, energy systems, and library science, among others, and is an essential source for scientists, programmers, engineers, practitioners, researchers, academicians, and students interested in the latest findings and advancements in supercomputing.

The Future of Airplane Factory: Digitally Optimized Intelligent Airplane Factory defines the architecture, key building blocks, and roadmap for actualizing a future airplane factory (FAF) that is digitally optimized for intelligent airplane assembly. They fit and integrate with other FAF building blocks that aggregate to a Digitally Optimized Intelligent Airplane Factory (DOIAF). The word "intelligent" refers to the ability of a system to make right decisions and take right action in the highly dynamic and fluid environment of the modern airplane manufacturing space. The event-driven dynamics inherent in the complexity of this environment drive the need for expert knowledge which resides in intelligence systems incorporating the experience of experts. Expert knowledge need not be smart, brilliant, or possess genius as long as the outcomes are derived from right decisions resulting in right actions-applied rapidly to sustain an optimized factory enterprise. Complete factory enterprise visibility requires a higher order of decision capability that current operating systems do not have. A highly visible factory collects and displays data and information as it happens-at a rate beyond the ability of humans and current systems to analyze, process, decide, and act upon. Expert systems are constructed to present humans with right decisions in the form of optimal choices for right actions by incorporating the knowledge of experts into the logic for the decision. Structured Knowledge-Based

Expert Systems (SKBES) are incorporated in this book and defined as a critical component for full enterprise actionable visibility. The power of the Digitally Optimized Intelligent Airplane Factory not only is found in its ability to unify the factory, reduce touch labor, improve quality, and streamline throughput but it also enables a significant reduction in above-the-shop-floor support and management. Such an ecosystem frees the human to focus on the complexity of interpersonal responsibilities. If the use of a DOIAF can be viewed as a holistic mechanism, then the human can be the agent engaging with that mechanism; improving negotiations for pricing, contracts, or other person-to-person events that require instinct and relationship.

From a little known address within the Vatican, operation "Eternity" is launched, ultimately redefining the world's intelligence services and their strategic plan for global cooperation. It all begins with a humble Pope with a different plan for this and the next world. "68 VIA CONDOTTI: Eternity Ltd." is the first of three Kate Keenan Special Assignment books in a serialized read not unlike watching a 1950s movie serial. A simple realization in the mind of God's Hand on Earth ultimately reaches beyond this time and world.

Traditionally, the natural sciences have been divided into two branches: the biological sciences and the physical sciences. Today, an increasing number of scientists are addressing problems lying at the intersection of the two. These problems are most often biological in nature, but examining them through the lens of the physical sciences can yield exciting results and opportunities. For example, one area producing effective cross-discipline research opportunities centers on the dynamics of systems. Equilibrium, multistability, and stochastic behavior-concepts familiar to physicists and chemists-are now being used to tackle issues associated with living systems such as adaptation, feedback, and emergent behavior. Research at the Intersection of the Physical and Life Sciences discusses how some of the most important scientific and societal challenges can be addressed, at least in part, by collaborative research that lies at the intersection of traditional disciplines, including biology, chemistry, and physics. This book describes how some of the mysteries of the biological world are being addressed using tools and techniques developed in the physical sciences, and identifies five areas of potentially transformative research. Work in these areas would have significant impact in both research and society at large by expanding our understanding of the physical world and by revealing new opportunities for advancing public health, technology, and stewardship of the environment. This book recommends several ways to accelerate such cross-discipline research. Many of these recommendations are directed toward those administering the faculties and resources of our great research institutions-and the stewards of our research funders, making this book an excellent resource for academic and research institutions, scientists, universities, and federal and private funding agencies.

This book takes a pragmatic and hype-free approach to explaining artificial intelligence and how it can be utilised by businesses today. At the core of the book is a framework, developed by the author, which describes in non-technical language the eight core capabilities of Artificial Intelligence (AI). Each of these capabilities, ranging from image recognition, through natural language processing, to prediction, is explained using real-life examples and how they can be applied in a business environment. It will include interviews with executives who have successfully implemented AI as well as CEOs from AI vendors and consultancies. AI is one of the most talked about technologies in business today. It has the ability to deliver step-change benefits to organisations and enables forward-thinking CEOs to rethink their business models or create completely new businesses. But most of the real value of AI is hidden behind marketing hyperbole, confusing terminology, inflated expectations and dire warnings of 'robot overlords'. Any business executive that wants to know how to exploit AI in their business today is left confused and frustrated. As an advisor in Artificial Intelligence, Andrew Burgess regularly comes face-to-face with business executives who are struggling to cut through the hype that surrounds AI. The knowledge and experience he has gained in advising them, as well as working as a strategic advisor to AI vendors and consultancies, has provided him with the skills to help business executives understand what AI is and how they can exploit its many benefits. Through the distilled knowledge included in this book business leaders will be able to take full advantage of this most disruptive of technologies and create substantial competitive advantage for their companies.

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