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**Applications of Evolutionary Computation** - Cecilia Di Chio 2010-03-25
This book constitutes the refereed proceedings of the International Workshops on the Applications of Evolutionary Computation, EvoApplications 2010, held in Istanbul, Turkey, in April 2010 colocated with the Evo* 2010 events. Thanks to the large number of submissions received, the proceedings for EvoApplications 2010 are divided across two volumes (LNCS 6024 and 6025). The present volume contains contributions for EvoCOMNET, EvoENVIRONMENT, EvoFIN, EvoMUSART, and EvoTRANSLOG. The 47 revised full papers presented were carefully reviewed and selected from a total of 86 submissions. This volume presents a careful selection of relevant EC examples combined with a thorough examination of the techniques used in EC. The papers in the volume illustrate the current state of the art in the application of EC and should help and inspire researchers and professionals to develop efficient EC methods for design and problem solving.

**Exploring Neural Networks with C#** - Ryszard Tadeusiewicz 2014-09-02
The utility of artificial neural network models lies in the fact that they can be used to infer functions from observations—making them especially useful in applications where the complexity of data or tasks makes the design of such functions by hand impractical. Exploring Neural Networks with C# presents the important properties of neural networks—while keeping the complex mathematics to a minimum. Explaining how to build and use neural networks, it presents complicated information about neural networks structure, functioning, and learning in a manner that is easy to understand. Taking a "learn by doing" approach, the book is filled with illustrations to guide you through the mystery of neural networks. Examples of experiments are provided in the text to encourage individual research. Online access to C# programs is also provided to help you discover the properties of neural networks. Following the procedures and using the programs included with the book will allow you to learn how to work with neural networks and evaluate your progress. You can download the programs as both executable applications and C# source code from http://home.agh.edu.pl/~tad//index.php?page=programy&lang=en

*The Handbook of Cuffless Blood Pressure Monitoring* - Josep Solà 2019-08-21
This book is the first comprehensive overview of the emerging field of cuffless blood pressure monitoring. Increasing clinical evidence proves that longitudinal measurements of blood pressure allow for earlier detection and better management of multiple medical conditions and for superior prediction of cardiovascular events. Unfortunately, today's clinical and industry standards for blood pressure monitoring still require the inflation of a pneumatic cuff around a limb each time a measurement is taken. Over the last decades clinicians, scientists and device manufacturers have explored the feasibility of technologies that reduce or even completely eliminate the need of cuffs, initiating the era of cuffless blood pressure monitoring. Among the existing literature, this book is intended to be a practical guide to navigate across this emerging

field. The chapters of the handbook have been elaborated by experts and key opinion leaders in the domain, and will guide the reader along the clinical, scientific, technical, and regulatory aspects of cuffless blood pressure monitoring.

Interpretable Machine Learning - Christoph Molnar 2020
This book is about making machine learning models and their decisions interpretable. After exploring the concepts of interpretability, you will learn about simple, interpretable models such as decision trees, decision rules and linear regression. Later chapters focus on general model-agnostic methods for interpreting black box models like feature importance and accumulated local effects and explaining individual predictions with Shapley values and LIME. All interpretation methods are explained in depth and discussed critically. How do they work under the hood? What are their strengths and weaknesses? How can their outputs be interpreted? This book will enable you to select and correctly apply the interpretation method that is most suitable for your machine learning project.

*Computational Intelligence Methods in COVID-19: Surveillance, Prevention, Prediction and Diagnosis* - Khalid Raza 2020-10-16
The novel coronavirus disease 2019 (COVID-19) pandemic has posed a major threat to human life and health. This book is beneficial for interdisciplinary students, researchers, and professionals to understand COVID-19 and how computational intelligence can be used for the purpose of surveillance, control, prevention, prediction, diagnosis, and potential treatment of the disease. The book contains different aspects of COVID-19 that includes fundamental knowledge, epidemic forecast models, surveillance and tracking systems, IoT- and IoMT-based integrated systems for COVID-19, social network analysis systems for COVID-19, radiological images (CT, X-ray) based diagnosis system, and computational intelligence and in silico drug design and drug repurposing methods against COVID-19 patients. The contributing authors of this volume are experts in their fields and they are from various reputed universities and institutions across the world. This volume is a valuable and comprehensive resource for computer and data scientists, epidemiologists, radiologists, doctors, clinicians, pharmaceutical professionals, along with graduate and research students of interdisciplinary and multidisciplinary sciences.

*Cumulated Index Medicus* - 1997

*Medical Image Computing and Computer-Assisted Intervention – MICCAI 2016* - Sebastien Ourselin 2016-10-17
The three-volume set LNCS 9900, 9901, and 9902 constitutes the refereed proceedings of the 19th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2016, held in Athens, Greece, in October 2016. Based on rigorous peer reviews, the program committee carefully selected 228 revised regular papers from 756 submissions for presentation in three volumes. The papers have been organized in the following topical sections: Part I: brain analysis, brain analysis - connectivity; brain analysis - cortical morphology; Alzheimer disease; surgical guidance and tracking; computer aided interventions; ultrasound image analysis; cancer image analysis; Part II: machine learning and feature selection; deep learning in medical imaging; applications of machine learning; segmentation; cell image analysis; Part III: registration and deformation estimation; shape modeling; cardiac and vascular image analysis; image reconstruction; and MR image analysis.

*Hands-On Neural Network Programming with C#* - Matt R. Cole 2018-09-29
Create and unleash the power of neural networks by implementing C# and .Net code Key FeaturesGet a strong foundation of neural networks with access to various machine learning and deep learning librariesReal-world case studies illustrating various neural network techniques and architectures used by practitionersCutting-edge coverage of Deep Networks, optimization algorithms, convolutional networks, autoencoders and many moreBook Description Neural networks have made a surprise comeback in the last few years and have brought tremendous innovation in the world of artificial intelligence. The goal of this book is to provide C# programmers with practical guidance in solving complex computational challenges using neural networks and C# libraries such as CNTK, and

TensorFlowSharp. This book will take you on a step-by-step practical journey, covering everything from the mathematical and theoretical aspects of neural networks, to building your own deep neural networks into your applications with the C# and .NET frameworks. This book begins by giving you a quick refresher of neural networks. You will learn how to build a neural network from scratch using packages such as Encog, Aforge, and Accord. You will learn about various concepts and techniques, such as deep networks, perceptrons, optimization algorithms, convolutional networks, and autoencoders. You will learn ways to add intelligent features to your .NET apps, such as facial and motion detection, object detection and labeling, language understanding, knowledge, and intelligent search. Throughout this book, you will be working on interesting demonstrations that will make it easier to implement complex neural networks in your enterprise applications. What you will learnUnderstand perceptrons and how to implement them in C#Learn how to train and visualize a neural network using cognitive servicesPerform image recognition for detecting and labeling objects using C# and TensorFlowSharpDetect specific image characteristics such as a face using Accord.NetDemonstrate particle swarm optimization using a simple XOR problem and EncogTrain convolutional neural networks using ConvNetSharpFind optimal parameters for your neural network functions using numeric and heuristic optimization techniques.Who this book is for This book is for Machine Learning Engineers, Data Scientists, Deep Learning Aspirants and Data Analysts who are now looking to move into advanced machine learning and deep learning with C#. Prior knowledge of machine learning and working experience with C# programming is required to take most out of this book

Practical Artificial Intelligence - Arnaldo Pérez Castaño 2018-05-23
Discover how all levels Artificial Intelligence (AI) can be present in the most unimaginable scenarios of ordinary lives. This book explores subjects such as neural networks, agents, multi agent systems, supervised learning, and unsupervised learning. These and other topics will be addressed with real world examples, so you can learn fundamental concepts with AI solutions and apply them to your own projects. People tend to talk about AI as something mystical and unrelated to their ordinary life. Practical Artificial Intelligence provides simple explanations and hands on instructions. Rather than focusing on theory and overly scientific language, this book will enable practitioners of all levels to not only learn about AI but implement its practical uses. What You'll Learn Understand agents and multi agents and how they are incorporated Relate machine learning to real-world problems and see what it means to you Apply supervised and unsupervised learning techniques and methods in the real world Implement reinforcement learning, game programming, simulation, and neural networks Who This Book Is For Computer science students, professionals, and hobbyists interested in AI and its applications.

**Vol.1 A.I.D.A.A. Proceedings of the XXV AIDAA International Congress of Aeronautics and Astronautics** - M. Costanzi 2021
The 2019 AIDAA Congress is the biennial Congress of the Italian Association of Aeronautics and Astronautics, the Italian no-profit cultural association dedicated to the aerospace community. AIDAA was formed in 1969 through a merging of the former Societies AIDA (Associazione Italiana di Aerotecnica formed in 1920) and AIR (Associazione Italiana Razzi).In 1951, AIDA was among the founders of the International Astronautical Federation (IAF) and in 1957 of the International Council of Aeronautical Sciences (ICAS). In 1992 AIDAA joined the Confederation of European Aerospace Societies (CEAS).The Congress is jointly hosted by AIDAA Rome Section, the Departments of Astronautic, Electric and Energetic Engineering (DIAEE) and of Mechanical and Aerospace Engineering (DIMA) of Civil and Industrial Engineering Faculty and the School of Aerospace Engineering (SIA) of Sapienza University of Rome. The degree courses in Aerospace Engineering are attended by almost 1500 students.

*Advances in Abstract Intelligence and Soft Computing* - Wang, Yingxu 2012-12-31
Continuous developments in software and

intelligence sciences have brought together the studies of both natural and machine intelligence and the relationship between the function of the brain and the abstract soft mind; creating a new multidisciplinary field of study. Advances in Abstract Intelligence and Soft Computing brings together the latest research in computer science: theoretical software engineering, cognitive science and informatics, and also their influence on the processes of natural and machine intelligence. This book is a collection of widespread research in the constant expansions on this emerging discipline.

**Exploring Neural Networks with C#** - Ryszard Tadeusiewicz 2017-07-27
The utility of artificial neural network models lies in the fact that they can be used to infer functions from observationsmaking them especially useful in applications where the complexity of data or tasks makes the design of such functions by hand impractical.Exploring Neural Networks with C# presents the important properties of neural networks

*Artificial Neural Networks: Biological Inspirations – ICANN 2005* - Wlodzislaw Duch 2005
The two volume set LNCS 3696 and LNCS 3697 constitutes the refereed proceedings of the 15th International Conference on Artificial Neural Networks, ICANN 2005, held in Warsaw, Poland in September 2005. The over 600 papers submitted to ICANN 2005 were thoroughly reviewed and carefully selected for presentation. The first volume includes 106 contributions related to Biological Inspirations; topics addressed are modeling the brain and cognitive functions, development of cognitive powers in embodied systems spiking neural networks, associative memory models, models of biological functions, projects in the area of neuroIT, evolutionary and other biological inspirations, self-organizing maps and their applications, computer vision, face recognition and detection, sound and speech recognition, bioinformatics, biomedical applications, and information-theoretic concepts in biomedical data analysis. The second volume contains 162 contributions related to Formal Models and their Applications and deals with new neural network models, supervised learning algorithms, ensemble-based learning, unsupervised learning, recurrent neural

networks, reinforcement learning, bayesian approaches to learning, learning theory, artificial neural networks for system modeling, decision making, optimalization and control, knowledge extraction from neural networks, temporal data analysis, prediction and forecasting, support vector machines and kernel-based methods, soft computing methods for data representation, analysis and processing, data fusion for industrial, medical and environmental applications, non-linear predictive models for speech processing, intelligent multimedia and semantics, applications to natural language processing, various applications, computational intelligence in games, and issues in hardware implementation.

Programming Neural Networks with Encog 3 in C# - Jeff Heaton 2011
This book focuses on using the neural network capabilities of Encog with the C# programming language. The reader is shown how to use classification, regression, and clustering to gain new insights into data.

**Two-dimensional High-lift Aerodynamic Optimization Using Neural Networks** - Roxana M. Greenman 1998

Introduction to Neural Networks with Java - Jeff Heaton 2008
Introduction to Neural Networks in Java, Second Edition, introduces the Java programmer to the world of Neural Networks and Artificial Intelligence. Neural network architectures such as the feedforward, Hopfield, and Self Organizing Map networks are discussed. Training techniques such as Backpropagation, Genetic Algorithms and Simulated Annealing are also introduced. Practical examples are given for each neural network. Examples include the Traveling Salesman problem, handwriting recognition, financial prediction, game strategy, learning mathematical functions and special application to Internet bots. All Java source code can be downloaded online.

*Epigenetic Principles of Evolution* - Nelson R. Cabej 2018-09-07
Epigenetic Principles of Evolution, Second Edition, fully examines the causal basis of evolution from an epigenetic point-of-view. By revealing the epigenetic uses of the genetic toolkit, this work demonstrates the primacy of

epigenetic mechanisms and epigenetic information in generating evolutionary novelties. The author convincingly supports his theoretical perspective with examples from varied fields of biology, emphasizing changes in developmental pathways as the basic source of evolutionary change in metazoans. Users will find a broader view of the epigenetic mechanisms of evolution, moving beyond conventional changes in epigenetic structures, such as DNA methylation, histone modifications, and patterns of miRNA, sRNA, and mRNA expression. This second edition is thoroughly updated to reflect new evidence and developing theories in the field of evolutionary epigenetics. New and revised chapters speak to the epigenetic basis of heredity, epigenetic regulation of animal structure and homeostasis, neural manipulation of gene expression, central control of gametogenesis, epigenetic control of early development, the origin of epigenetic information, evolutionary changes in response to environmental stressors, epigenetics of sympatric evolution, and the epigenetics of the Cambrian explosion, among other topics. Adopts an integrative approach to examine the causal basis of evolution from an epigenetic point-of-view Features new and revised chapters which reflect novel experimental and observational evidence in the field of evolutionary epigenetics, as well as alternative theoretical approaches Offers a broad view of epigenetic mechanisms of evolution, moving beyond conventional changes in epigenetic mechanisms, such as DNA methylation, histone modifications, and patterns of miRNA, sRNA and mRNA expression

*The Art of Feature Engineering* - Pablo Duboue 2020-06-25
When machine learning engineers work with data sets, they may find the results aren't as good as they need. Instead of improving the model or collecting more data, they can use the feature engineering process to help improve results by modifying the data's features to better capture the nature of the problem. This practical guide to feature engineering is an essential addition to any data scientist's or machine learning engineer's toolbox, providing new ideas on how to improve the performance of a machine learning solution. Beginning with the basic concepts and techniques, the text builds up to a unique cross-domain approach that spans data on graphs, texts, time series, and images, with fully worked out case studies. Key topics include binning, out-of-fold estimation, feature selection, dimensionality reduction, and encoding variable-length data. The full source code for the case studies is available on a companion website as Python Jupyter notebooks.

**Principles of Genetics and Molecular Epidemiology** - Juan Carlos Gomez-Verjan 2022
This book covers some of the most novel genetic and genomic concepts in epidemiology, such as geospatial statistics and systems biology from a clinical point of view by explaining molecular applications with accessible human studies. Featuring a comprehensive table of contents, it includes chapters from genomics and epidemiology surveillance to transcriptomics and alternative splicing principles. Across 17 well-organized chapters, this book meets attempt to explain easily to clinicians and students with basic principles of the genetics, genomics, molecular biology and its applications to epidemiology and public health. The text is distinct from other literature on the market because it covers useful genomic tools applied in epidemiology for clinicians who may not be experts in this branch of health science. Principles of Genetics and Molecular Epidemiology demystifies the idea that biomedicine is far from being applied in both epidemiology and clinical practice.

**Deep Reinforcement Learning in Unity** - Abhilash Majumder 2021
Gain an in-depth overview of reinforcement learning for autonomous agents in game development with Unity. This book starts with an introduction to state-based reinforcement learning algorithms involving Markov models, Bellman equations, and writing custom C# code with the aim of contrasting value and policy-based functions in reinforcement learning. Then, you will move on to path finding and navigation meshes in Unity, setting up the ML Agents Toolkit (including how to install and set up ML agents from the GitHub repository), and installing fundamental machine learning libraries and frameworks (such as Tensorflow). You will learn about: deep learning and work through an introduction to Tensorflow for writing neural networks (including perceptron,

convolution, and LSTM networks), Q learning with Unity ML agents, and porting trained neural network models in Unity through the Python-C# API. You will also explore the OpenAI Gym Environment used throughout the book. Deep Reinforcement Learning in Unity provides a walk-through of the core fundamentals of deep reinforcement learning algorithms, especially variants of the value estimation, advantage, and policy gradient algorithms (including the differences between on and off policy algorithms in reinforcement learning). These core algorithms include actor critic, proximal policy, and deep deterministic policy gradients and its variants. And you will be able to write custom neural networks using the Tensorflow and Keras frameworks. Deep learning in games makes the agents learn how they can perform better and collect their rewards in adverse environments without user interference. The book provides a thorough overview of integrating ML Agents with Unity for deep reinforcement learning. You will: Understand how deep reinforcement learning works in games Grasp the fundamentals of deep reinforcement learning Integrate these fundamentals with the Unity ML Toolkit SDK Gain insights into practical neural networks for training Agent Brain in the context of Unity ML Agents Create different models and perform hyper-parameter tuning Understand the Brain-Academy architecture in Unity ML Agents Understand the Python-C# API interface during real-time training of neural networks Grasp the fundamentals of generic neural networks and their variants using Tensorflow Create simulations and visualize agents playing games in Unity.

**Introduction to Neural Networks for C# (2nd Edition)** - Jeff Heaton 2008-10
This resource introduces the C# programmer to the world of Neural Networks and Artificial Intelligence. Training techniques, such as backpropagation, genetic algorithms, and simulated annealing are also introduced.

**Auto-Segmentation for Radiation Oncology** - Jinzhong Yang 2021-04-19
This book provides a comprehensive introduction to current state-of-the-art auto-segmentation approaches used in radiation oncology for auto-delineation of organs-of-risk for thoracic radiation treatment planning.

Containing the latest, cutting edge technologies and treatments, it explores deep-learning methods, multi-atlas-based methods, and model-based methods that are currently being developed for clinical radiation oncology applications. Each chapter focuses on a specific aspect of algorithm choices and discusses the impact of the different algorithm modules to the algorithm performance as well as the implementation issues for clinical use (including data curation challenges and auto-contour evaluations). This book is an ideal guide for radiation oncology centers looking to learn more about potential auto-segmentation tools for their clinic in addition to medical physicists commissioning auto-segmentation for clinical use. Features: Up-to-date with the latest technologies in the field Edited by leading authorities in the area, with chapter contributions from subject area specialists All approaches presented in this book are validated using a standard benchmark dataset established by the Thoracic Auto-segmentation Challenge held as an event of the 2017 Annual Meeting of American Association of Physicists in Medicine

**Artificial Neural Networks in Real-life Applications** - Juan Ramon Rabunal 2006-01-01
"This book offers an outlook of the most recent works at the field of the Artificial Neural Networks (ANN), including theoretical developments and applications of systems using intelligent characteristics for adaptability"-- Provided by publisher.

Music, Gestalt, and Computing - Marc Leman 1997-09-10
This book presents a coherent state-of-the-art survey on the area of systematic and cognitive musicology which has enjoyed dynamic growth now for many years. It is devoted to exploring the relationships between acoustics, human information processing, and culture as well as to methodological issues raised by the widespread use of computers as a powerful tool for theory construction, theory testing, and the manipulation of musical information or any kind of data manipulation related to music.

Neural Networks in Unity - Abhishek Nandy 2018-07-14
Learn the core concepts of neural networks and discover the different types of neural network, using Unity as your platform. In this book you

will start by exploring back propagation and unsupervised neural networks with Unity and C#. You'll then move onto activation functions, such as sigmoid functions, step functions, and so on. The author also explains all the variations of neural networks such as feed forward, recurrent, and radial. Once you've gained the basics, you'll start programming Unity with C#. In this section the author discusses constructing neural networks for unsupervised learning, representing a neural network in terms of data structures in C#, and replicating a neural network in Unity as a simulation. Finally, you'll define back propagation with Unity C#, before compiling your project. What You'll Learn Discover the concepts behind neural networks Work with Unity and C# See the difference between fully connected and convolutional neural networks Master neural network processing for Windows 10 UWP Who This Book Is For Gaming professionals, machine learning and deep learning enthusiasts.

CMBEBIH 2017 - Almir Badnjevic 2017-03-14 This volume presents the proceedings of the International Conference on Medical and Biological Engineering held from 16 to 18 March 2017 in Sarajevo, Bosnia and Herzegovina. Focusing on the theme of 'Pursuing innovation. Shaping the future', it highlights the latest advancements in Biomedical Engineering and also presents the latest findings, innovative solutions and emerging challenges in this field. Topics include: - Biomedical Signal Processing - Biomedical Imaging and Image Processing - Biosensors and Bioinstrumentation - Bio-Micro/Nano Technologies - Biomaterials - Biomechanics, Robotics and Minimally Invasive Surgery - Cardiovascular, Respiratory and Endocrine Systems Engineering - Neural and Rehabilitation Engineering - Molecular, Cellular and Tissue Engineering - Bioinformatics and Computational Biology - Clinical Engineering and Health Technology Assessment - Health Informatics, E-Health and Telemedicine - Biomedical Engineering Education - Pharmaceutical Engineering

*An Introduction to Neural Networks* - Kevin Gurney 2018-10-08 Though mathematical ideas underpin the study of neural networks, the author presents the fundamentals without the full mathematical

apparatus. All aspects of the field are tackled, including artificial neurons as models of their real counterparts; the geometry of network action in pattern space; gradient descent methods, including back-propagation; associative memory and Hopfield nets; and self-organization and feature maps. The traditionally difficult topic of adaptive resonance theory is clarified within a hierarchical description of its operation. The book also includes several real-world examples to provide a concrete focus. This should enhance its appeal to those involved in the design, construction and management of networks in commercial environments and who wish to improve their understanding of network simulator packages. As a comprehensive and highly accessible introduction to one of the most important topics in cognitive and computer science, this volume should interest a wide range of readers, both students and professionals, in cognitive science, psychology, computer science and electrical engineering.

**Electronic Noses and Tongues in Food Science** - Maria Luz Rodriguez Mendez 2016-02-19 Electronic Noses and Tongues in Food Science describes the electronic products of advanced chemical and physical sciences combined with intuitive integration of microprocessors, advanced bioinformatics and statistics. These include, for example, voltammetric, bio-electronic, piezoelectric platforms made from a variety of components including, nanoparticles, enzyme biosensors, heavy metals, graphite-epoxy composites, metal oxide semiconductors, microelectrodes, microfluidic channels, pre-manufactured gas sensors, redox enzymes and others and is an ideal resource for understanding and utilizing their power in Food Science settings. Devices used to analyse one particular food item can theoretically be adapted for other food items or components. This does not just mean the re-deploying the physical platforms but also the mode of bioinformatic and statistical analysis. This includes artificial neural networks (ANN), linear discriminant analysis (LDA), partial least squares (PLS), principal component analysis (PCA) etc. In other words, there is cross transference of chemistry, physics, concepts, techniques, findings and approaches from one food to another. Electronic noses and

tongues are two of these devices but are advancing in application and importance. This book provides examples of the use of electronic noses and tongues to characterise components that contribute to sensory or compositional profiles, from ripening to harvesting and from storage of raw materials to packaging and consumption. These devises are suitable for high-throughput analysis, quality control or to determine the nature and extent of spoilage and adulteration, and have also been used to ascertain the geographical origins of food and mixtures. Presents latest developments in the application of electronic nose and tongue technologies to a variety of food-specific needs Includes both electronic nose, electronic tongue and combined technology insights Each chapter has sections on: The physical and chemical platforms; Analysis of specific foods; Applications to other foods and areas of food science

Dive into Neural Networks Using C Sharp - Billy Fuller 2016-05-10
This updated and expanded second edition of Book provides a user-friendly introduction to the subject, Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening overview is a required reading for all those interested in the subject . We hope you find this book useful in shaping your future career & Business.

**Monte Carlo Techniques in Radiation Therapy** - Frank Verhaegen 2021-11-22
About ten years after the first edition comes this second edition of Monte Carlo Techniques in Radiation Therapy: Introduction, Source Modelling, and Patient Dose Calculations, thoroughly updated and extended with the latest topics, edited by Frank Verhaegen and Joao Seco. This book aims to provide a brief introduction to the history and basics of Monte Carlo simulation, but again has a strong focus on applications in radiotherapy. Since the first edition, Monte Carlo simulation has found many new applications, which are included in detail. The applications sections in this book cover the following: Modelling transport of photons,

electrons, protons, and ions Modelling radiation sources for external beam radiotherapy Modelling radiation sources for brachytherapy Design of radiation sources Modelling dynamic beam delivery Patient dose calculations in external beam radiotherapy Patient dose calculations in brachytherapy Use of artificial intelligence in Monte Carlo simulations This book is intended for both students and professionals, both novice and experienced, in medical radiotherapy physics. It combines overviews of development, methods, and references to facilitate Monte Carlo studies.

**Dive into Machine Learning Using C Sharp** - Louie Kumar 2016-05-10
This updated and expanded second edition of Book provides a user-friendly introduction to the subject, Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening overview is a required reading for all those interested in the subject . We hope you find this book useful in shaping your future career & Business.

**Human and Machine Consciousness** - David Gamez 2018-03-07
Consciousness is widely perceived as one of the most fundamental, interesting and difficult problems of our time. However, we still know next to nothing about the relationship between consciousness and the brain and we can only speculate about the consciousness of animals and machines. Human and Machine Consciousness presents a new foundation for the scientific study of consciousness. It sets out a bold interpretation of consciousness that neutralizes the philosophical problems and explains how we can make scientific predictions about the consciousness of animals, brain-damaged patients and machines. Gamez interprets the scientific study of consciousness as a search for mathematical theories that map between measurements of consciousness and measurements of the physical world. We can use artificial intelligence to discover these theories and they could make accurate predictions about the consciousness of humans, animals and artificial systems. Human and Machine

Consciousness also provides original insights into unusual conscious experiences, such as hallucinations, religious experiences and out-of-body states, and demonstrates how 'designer' states of consciousness could be created in the future. Gamez explains difficult concepts in a clear way that closely engages with scientific research. His punchy, concise prose is packed with vivid examples, making it suitable for the educated general reader as well as philosophers and scientists. Problems are brought to life in colourful illustrations and a helpful summary is given at the end of each chapter. The endnotes provide detailed discussions of individual points and full references to the scientific and philosophical literature.

**Deep Learning with Python** - Francois Chollet 2017-11-30
Summary Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library. Written by Keras creator and Google AI researcher François Chollet, this book builds your understanding through intuitive explanations and practical examples. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Machine learning has made remarkable progress in recent years. We went from near-unusable speech and image recognition, to near-human accuracy. We went from machines that couldn't beat a serious Go player, to defeating a world champion. Behind this progress is deep learning—a combination of engineering advances, best practices, and theory that enables a wealth of previously impossible smart applications. About the Book Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library. Written by Keras creator and Google AI researcher François Chollet, this book builds your understanding through intuitive explanations and practical examples. You'll explore challenging concepts and practice with applications in computer vision, natural-language processing, and generative models. By the time you finish, you'll have the knowledge and hands-on skills to apply deep learning in your own projects. What's Inside Deep learning from first principles Setting up your own deep-learning environment Image-classification models Deep learning for text and sequences Neural style transfer, text generation, and image generation About the Reader Readers need intermediate Python skills. No previous experience with Keras, TensorFlow, or machine learning is required. About the Author François Chollet works on deep learning at Google in Mountain View, CA. He is the creator of the Keras deep-learning library, as well as a contributor to the TensorFlow machine-learning framework. He also does deep-learning research, with a focus on computer vision and the application of machine learning to formal reasoning. His papers have been published at major conferences in the field, including the Conference on Computer Vision and Pattern Recognition (CVPR), the Conference and Workshop on Neural Information Processing Systems (NIPS), the International Conference on Learning Representations (ICLR), and others. Table of Contents PART 1 - FUNDAMENTALS OF DEEP LEARNING What is deep learning? Before we begin: the mathematical building blocks of neural networks Getting started with neural networks Fundamentals of machine learning PART 2 - DEEP LEARNING IN PRACTICE Deep learning for computer vision Deep learning for text and sequences Advanced deep-learning best practices Generative deep learning Conclusions appendix A - Installing Keras and its dependencies on Ubuntu appendix B - Running Jupyter notebooks on an EC2 GPU instance

*Theory, Methodology, Tools and Applications for Modeling and Simulation of Complex Systems* - Lin Zhang 2016-09-21
This four-volume set (CCIS 643, 644, 645, 646) constitutes the refereed proceedings of the 16th Asia Simulation Conference and the First Autumn Simulation Multi-Conference, AsiaSim / SCS AutumnSim 2016, held in Beijing, China, in October 2016. The 265 revised full papers presented were carefully reviewed and selected from 651 submissions. The papers in this third volume of the set are organized in topical sections on Cloud technologies in simulation applications; fractional calculus with applications and simulations; modeling and simulation for energy, environment and climate; SBA virtual prototyping engineering technology;

simulation and Big Data.
**Optics Letters** - 1992

*Proceedings of the International Conference on Artificial Intelligence and Computer Vision (AICV2021)* - Aboul Ella Hassanien 2021-05-28 This book presents the 2nd International Conference on Artificial Intelligence and Computer Visions (AICV 2021) proceeding, which took place in Settat, Morocco, from June 28- to 30, 2021. AICV 2021 is organized by the Scientific Research Group in Egypt (SRGE) and the Computer, Networks, Mobility and Modeling Laboratory (IR2M), Hassan 1st University, Faculty of Sciences Techniques, Settat, Morocco. This international conference highlighted essential research and developments in the fields of artificial intelligence and computer visions. The book is divided into sections, covering the following topics: Deep Learning and Applications; Smart Grid, Internet of Things, and Mobil Applications; Machine Learning and Metaheuristics Optimization; Business Intelligence and Applications; Machine Vision, Robotics, and Speech Recognition; Advanced Machine Learning Technologies; Big Data, Digital Transformation, AI and Network Analysis; Cybersecurity; Feature Selection, Classification, and Applications.
**Artificial Neural Nets and Genetic Algorithms** - 1993

**Official Gazette of the United States Patent and Trademark Office** - United States. Patent and Trademark Office 1992

*Neural Fuzzy Systems* - Chin-Teng Lin 1996 Neural Fuzzy Systems provides a comprehensive, up-to-date introduction to the basic theories of fuzzy systems and neural networks, as well as an exploration of how these two fields can be integrated to create Neural-Fuzzy Systems. It includes Matlab software, with a Neural Network Toolkit, and a Fuzzy System Toolkit.
**Programming Neural Networks with Encog 2 in Java** - Jeff Heaton 2009-12-01 Encog is an advanced neural network and bot programming framework. This book focuses on using Encog to create a variety of neural network architectures using the Java programming language. Neural network architectures such as feedforward/perceptrons, Hopfield, Elman, Jordan, Radial Basis Function, and Self Organizing maps are all demonstrated. This book also shows how to use Encog to train neural networks using a variety of means. Several propagation techniques, such as back propagation, resilient propagation (RPROP) and the Manhattan update rule are discussed. Additionally, training with a genetic algorithm and simulated annealing is discussed as well. You will also see how to enhance training using techniques such as pruning, hybrid training, Real world examples tie the book together. Pattern recognition applications such as OCR, image and text recognition will be introduced. You will see how to apply time series and forecasting and how to financial markets. All of the Encog neural network components will be demonstrated to show how to use them in your own neural network applications.