

B Gan Unified Framework Of Generative Adversarial Networks

The primary focus of this book is on basic device concepts, memory cell design, and process technology integration. The first part provides in-depth coverage of conventional nonvolatile memory devices, stack structures from device physics, historical perspectives, and identifies limitations of conventional devices. The second part reviews advances made in reducing and/or eliminating existing limitations of NVM device parameters from the standpoint of device scalability, application extendibility, and reliability. The final part proposes multiple options of silicon based unified (nonvolatile) memory cell concepts and stack designs (SUMs). The book provides Industrial R&D personnel with the knowledge to drive the future memory technology with the established silicon FET-based establishments of their own. It explores application potentials of memory in areas such as robotics, avionics, health-industry, space vehicles, space sciences, bio-imaging, genetics etc.

The 6-volume set, comprising the LNCS books 12535 until 12540, constitutes the refereed proceedings of 28 out of the 45 workshops held at the 16th European Conference on Computer Vision, ECCV 2020. The conference was planned to take place in Glasgow, UK, during August 23-28, 2020, but changed to a virtual format due to the COVID-19 pandemic. The 249 full papers, 18 short papers, and 21 further contributions included in the workshop proceedings were carefully reviewed and selected from a total of 467 submissions. The papers deal with diverse computer vision topics. Part III includes the Advances in Image Manipulation Workshop and Challenges.

This book constitutes the refereed proceedings of the 11th International Conference on Telecommunications, ICT 2004, held in Fortaleza, Brazil in August 2004. The 188 revised full papers presented were carefully reviewed and selected from 430 submissions. The papers are organized in topical sections on multimedia services, antennas, transmission technologies and wireless networks, communication theory, telecommunication pricing and billing, network performance and telecommunication services, active network and mobile agents, optical photonic techniques, optical networks, ad-hoc networks, signal processing, network performance and MPLS, traffic engineering, SIP, Qos and switches, network operation management, mobility and broadband wireless, cellular system evolution, personal communication, satellites, mobility management, network reliability, ATM and Web services, security, switching and routing, next generation systems, wireless access, Internet, etc.

The 4 volume set LNCS 12112-12114 constitutes the papers of the 25th International Conference on Database Systems for Advanced Applications which will be held online in September 2020. The 119 full papers presented together with 19 short papers plus 15 demo papers and 4 industrial papers in this volume were carefully reviewed and selected from a total of 487 submissions. The conference program presents the state-of-the-art R&D activities in database systems and their applications. It provides a forum for technical presentations and discussions among database researchers, developers and users from academia, business and industry.

This book constitutes the workshop proceedings of the 24th International Conference on Database Systems for Advanced Applications, DASFAA 2019, held in Chiang Mai, Thailand, in April 2019. The 14 full papers presented were carefully selected and reviewed from 26 submissions to the three following workshops: the 6th International Workshop on Big Data Management and Service, BDMS 2019; the 4th International Workshop on Big Data Quality Management, BDQM 2019; and the Third International Workshop on Graph Data Management and Analysis, GDMA 2019. This volume also includes the short papers, demo papers, and tutorial papers of the main conference DASFAA 2019.

The six volume set of LNCS 12622-12627 constitutes the proceedings of the 15th Asian Conference on Computer Vision, ACCV 2020, held in Kyoto, Japan, in November/ December 2020.* The total of 254 contributions was carefully reviewed and selected from 768 submissions during two rounds of reviewing and improvement. The papers focus on the following topics: Part I: 3D computer vision; segmentation and grouping Part II: low-level vision, image processing; motion and tracking Part III: recognition and detection; optimization, statistical methods, and learning; robot vision Part IV: deep learning for computer vision, generative models for computer vision Part V: face, pose, action, and gesture; video analysis and event recognition; biomedical image analysis Part VI: applications of computer vision; vision for X; datasets and performance analysis *The conference was held virtually.

Neural Information Processing 26th International Conference, ICONIP 2019, Sydney, NSW, Australia, December 12–15, 2019, Proceedings, Part IV Springer Nature

This book constitutes the proceedings of the 12th International Workshop on Machine Learning in Medical Imaging, MLMI 2021, held in conjunction with MICCAI 2021, in Strasbourg, France, in September 2021.* The 71 papers presented in this volume were carefully reviewed and selected from 92 submissions. They focus on major trends and challenges in the above-mentioned area, aiming to identify new-cutting-edge techniques and their uses in medical imaging. Topics dealt with are: deep learning, generative adversarial learning, ensemble learning, sparse learning, multi-task learning, multi-view learning, manifold learning, and reinforcement learning, with their applications to medical image analysis, computer-aided detection and diagnosis, multi-modality fusion, image reconstruction, image retrieval, cellular image analysis, molecular imaging, digital pathology, etc. *The workshop was held virtually.

Imaging and analysis are widely involved in various research fields, including biomedical applications, medical imaging and diagnosis, computer vision, autonomous driving, and robot controls. Imaging and analysis are now facing big changes regarding intelligence, due to the breakthroughs of artificial intelligence techniques, including deep learning.

Many difficulties in image generation, reconstruction, de-noising skills, artifact removal, segmentation, detection, and control tasks are being overcome with the help of advanced artificial intelligence approaches. This Special Issue focuses on the latest developments of learning-based intelligent imaging techniques and subsequent analyses, which include photographic imaging, medical imaging, detection, segmentation, medical diagnosis, computer vision, and vision-based robot control. These latest technological developments will be shared through this Special Issue for the various researchers who are involved with imaging itself, or are using image data and analysis for their own specific purposes.

Unsaturated Soils: Research and Applications contains 247 papers presented at 6th International Conference on Unsaturated Soils (UNSAT2014, Sydney, Australia, 2-4 July 2014). The two volumes provide an overview of recent experimental and theoretical advances in a wide variety of topics related to unsaturated soil mechanics: - Unsaturated Soil Behavior - Experimentation - Modelling - Case Histories - Geotechnical Engineering Problems - Multidisciplinary and New Areas Unsaturated Soils: Research and Applications presents a wealth of information, and is of interest to researchers and practising engineers in soil mechanics and geotechnical engineering. These proceedings are dedicated to Professor Geoffrey E. Blight (1934-2013), who passed in November 2013.

The 30-volume set, comprising the LNCS books 12346 until 12375, constitutes the refereed proceedings of the 16th European Conference on Computer Vision, ECCV 2020, which was planned to be held in Glasgow, UK, during August 23-28, 2020. The conference was held virtually due to the COVID-19 pandemic. The 1360 revised papers

presented in these proceedings were carefully reviewed and selected from a total of 5025 submissions. The papers deal with topics such as computer vision; machine learning; deep neural networks; reinforcement learning; object recognition; image classification; image processing; object detection; semantic segmentation; human pose estimation; 3d reconstruction; stereo vision; computational photography; neural networks; image coding; image reconstruction; object recognition; motion estimation.

The book Intelligent Systems and Applications - Proceedings of the 2020 Intelligent Systems Conference is a remarkable collection of chapters covering a wider range of topics in areas of intelligent systems and artificial intelligence and their applications to the real world. The Conference attracted a total of 545 submissions from many academic pioneering researchers, scientists, industrial engineers, students from all around the world. These submissions underwent a double-blind peer review process. Of those 545 submissions, 177 submissions have been selected to be included in these proceedings. As intelligent systems continue to replace and sometimes outperform human intelligence in decision-making processes, they have enabled a larger number of problems to be tackled more effectively. This branching out of computational intelligence in several directions and use of intelligent systems in everyday applications have created the need for such an international conference which serves as a venue to report on up-to-the-minute innovations and developments. This book collects both theory and application based chapters on all aspects of artificial intelligence, from classical to intelligent scope. We hope that readers find the volume interesting and valuable; it provides the state of the art intelligent methods and techniques for solving real world problems along with a vision of the future research. Cluster analysis is an unsupervised process that divides a set of objects into homogeneous groups. This book starts with basic information on cluster analysis, including the classification of data and the corresponding similarity measures, followed by the presentation of over 50 clustering algorithms in groups according to some specific baseline methodologies such as hierarchical, center-based, and search-based methods. As a result, readers and users can easily identify an appropriate algorithm for their applications and compare novel ideas with existing results. The book also provides examples of clustering applications to illustrate the advantages and shortcomings of different clustering architectures and algorithms. Application areas include pattern recognition, artificial intelligence, information technology, image processing, biology, psychology, and marketing. Readers also learn how to perform cluster analysis with the C/C++ and MATLAB programming languages.

The three-volume set LNCS 12681-12683 constitutes the proceedings of the 26th International Conference on Database Systems for Advanced Applications, DASFAA 2021, held in Taipei, Taiwan, in April 2021. The total of 156 papers presented in this three-volume set was carefully reviewed and selected from 490 submissions. The topic areas for the selected papers include information retrieval, search and recommendation techniques; RDF, knowledge graphs, semantic web, and knowledge management; and spatial, temporal, sequence, and streaming data management, while the dominant keywords are network, recommendation, graph, learning, and model. These topic areas and keywords shed the light on the direction where the research in DASFAA is moving towards. Due to the Corona pandemic this event was held virtually.

The proceedings set LNCS 11727, 11728, 11729, 11730, and 11731 constitute the proceedings of the 28th International Conference on Artificial Neural Networks, ICANN 2019, held in Munich, Germany, in September 2019. The total of 277 full papers and 43 short papers presented in these proceedings was carefully reviewed and selected from 494 submissions. They were organized in 5 volumes focusing on theoretical neural computation; deep learning; image processing; text and time series; and workshop and special sessions.

DEEP LEARNING FOR THE EARTH SCIENCES Explore this insightful treatment of deep learning in the field of earth sciences, from four leading voices Deep learning is a fundamental technique in modern Artificial Intelligence and is being applied to disciplines across the scientific spectrum; earth science is no exception. Yet, the link between deep learning and Earth sciences has only recently entered academic curricula and thus has not yet proliferated. Deep Learning for the Earth Sciences delivers a unique perspective and treatment of the concepts, skills, and practices necessary to quickly become familiar with the application of deep learning techniques to the Earth sciences. The book prepares readers to be ready to use the technologies and principles described in their own research. The distinguished editors have also included resources that explain and provide new ideas and recommendations for new research especially useful to those involved in advanced research education or those seeking PhD thesis orientations. Readers will also benefit from the inclusion of: An introduction to deep learning for classification purposes, including advances in image segmentation and encoding priors, anomaly detection and target detection, and domain adaptation An exploration of learning representations and unsupervised deep learning, including deep learning image fusion, image retrieval, and matching and co-registration Practical discussions of regression, fitting, parameter retrieval, forecasting and interpolation An examination of physics-aware deep learning models, including emulation of complex codes and model parametrizations Perfect for PhD students and researchers in the fields of geosciences, image processing, remote sensing, electrical engineering and computer science, and machine learning, Deep Learning for the Earth Sciences will also earn a place in the libraries of machine learning and pattern recognition researchers, engineers, and scientists.

This book constitutes the refereed proceedings of the 8th International Conference on Health Information Science, HIS 2019, held in Xi'an, China, in October 2019. The 14 full papers and 14 short papers presented were carefully reviewed and selected from 60 submissions. The papers are organized in topical sections named: Medical Information System and Platform; Mining Medical Data; EEG and ECG; Medical Image; Mental Health; and Healthcare.

Research on personality psychology is making important contributions to psychological science and applied psychology. This second edition of The Cambridge Handbook of Personality Psychology offers a one-stop resource for scientific personality psychology. It summarizes cutting-edge personality research in all its forms, including genetics,

psychometrics, social-cognitive psychology, and real-world expressions, with informative and lively chapters that also highlight some areas of controversy. The team of renowned international authors, led by two esteemed editors, ensures a wide range of theoretical perspectives. Each research area is discussed in terms of scientific foundations, main theories and findings, and future directions for research. The handbook also features advances in technology, such as molecular genetics and functional neuroimaging, as well as contemporary statistical approaches. An invaluable aid to understanding the central role played by personality in psychology, it will appeal to students, researchers, and practitioners in psychology, behavioral neuroscience, and the social sciences.

The seven-volume set LNCS 12261, 12262, 12263, 12264, 12265, 12266, and 12267 constitutes the refereed proceedings of the 23rd International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2020, held in Lima, Peru, in October 2020. The conference was held virtually due to the COVID-19 pandemic. The 542 revised full papers presented were carefully reviewed and selected from 1809 submissions in a double-blind review process. The papers are organized in the following topical sections: Part I: machine learning methodologies Part II: image reconstruction; prediction and diagnosis; cross-domain methods and reconstruction; domain adaptation; machine learning applications; generative adversarial networks Part III: CAI applications; image registration; instrumentation and surgical phase detection; navigation and visualization; ultrasound imaging; video image analysis Part IV: segmentation; shape models and landmark detection Part V: biological, optical, microscopic imaging; cell segmentation and stain normalization; histopathology image analysis; ophthalmology Part VI: angiography and vessel analysis; breast imaging; colonoscopy; dermatology; fetal imaging; heart and lung imaging; musculoskeletal imaging Part VII: brain development and atlases; DWI and tractography; functional brain networks; neuroimaging; positron emission tomography

This book presents revised selected papers from the 16th International Forum on Digital TV and Wireless Multimedia Communication, IFTC 2019, held in Shanghai, China, in September 2019. The 34 full papers presented in this volume were carefully reviewed and selected from 120 submissions. They were organized in topical sections on image processing; machine learning; quality assessment; telecommunications; video surveillance; virtual reality.

The two-volume set CCIS 483 and CCIS 484 constitutes the refereed proceedings of the 6th Chinese Conference on Pattern Recognition, CCPR 2014, held in Changsha, China, in November 2014. The 112 revised full papers presented in two volumes were carefully reviewed and selected from 225 submissions. The papers are organized in topical sections on fundamentals of pattern recognition; feature extraction and classification; computer vision; image processing and analysis; video processing and analysis; biometric and action recognition; biomedical image analysis; document and speech analysis; pattern recognition applications.

Biodiversity in Drylands, the first internationally based synthesis volume in the Long-Term Ecological Research (LTER) Network Series, unifies the concepts of species and landscape diversity with respect to deserts. Within this framework, the book treats several emerging themes, among them: $\frac{1}{2}$ how animal biodiversity can be supported in deserts $\frac{1}{2}$ diversity's relation to habitat structure, environmental variability, and species interactions $\frac{1}{2}$ the relation between spatial scale and diversity $\frac{1}{2}$ how to use a landscape simulation model to understand diversity $\frac{1}{2}$ microbial contributions to biodiversity in deserts $\frac{1}{2}$ species diversity and ecosystem processes $\frac{1}{2}$ resource partitioning and biodiversity in fractal environments $\frac{1}{2}$ effects of grazing on biodiversity $\frac{1}{2}$ reconciliation ecology and the future of conservation management In the face of global change, integration is crucial for dealing with the problem of sustaining biodiversity. This book promises to be a vital resource for students, researchers, and managers interested in integrative species, resource, and landscape diversities.

This 8-volumes set constitutes the refereed of the 25th International Conference on Pattern Recognition Workshops, ICPR 2020, held virtually in Milan, Italy and rescheduled to January 10 - 11, 2021 due to Covid-19 pandemic. The 416 full papers presented in these 8 volumes were carefully reviewed and selected from about 700 submissions. The 46 workshops cover a wide range of areas including machine learning, pattern analysis, healthcare, human behavior, environment, surveillance, forensics and biometrics, robotics and egovision, cultural heritage and document analysis, retrieval, and women at ICPR2020.

This book introduces the reader to how fundamental topics in particle physics can be studied with the largest neutrino telescopes currently in operation. Due to their large size, reaching cubic-kilometer volumes, and their wide energy response, these unusual detectors can provide insight on neutrino oscillations, dark matter searches or searches for exotic particles, new neutrino interactions or extra dimensions, among many other topics. Lacking a man-made neutrino 'beam', neutrino telescopes use the copious flux of neutrinos continuously produced by cosmic rays interacting in the Earth's atmosphere, as well as neutrinos from astrophysical origin. They have therefore access to neutrinos of higher energies and much longer baselines than those produced in present accelerators, being able to search for new physics at complementary scales than currently available in particle physics laboratories around the world. Written by carefully chosen experts in the field, the book introduces each topic in a pedagogical way apt not only to professionals, but also to students or the interested reader with a background in physics.

This edited volume discusses the complexity of tumor microenvironments during cancer development, progression and treatment. Each chapter presents a different mathematical model designed to investigate the interactions between tumor cells and the surrounding stroma and stromal cells. The topics covered in this book include the quantitative image analysis of a tumor microenvironment, the microenvironmental barriers in oxygen and drug delivery to tumors, the development of tumor microenvironmental niches and sanctuaries, intravenous transport of the circulating tumor cells, the role of the tumor microenvironment in chemotherapeutic interventions, the interactions between tumor cells, the extracellular matrix, the interstitial fluid, and the

immune and stromal cells. Mathematical models discussed here embrace both continuous and agent-based approaches, as well as mathematical frameworks of solid mechanics, fluid dynamics and optimal control theory. The topics in each chapter will be of interest to a biological community wishing to apply the mathematical methods to interpret their experimental data, and to a biomathematical audience interested in exploring how mathematical models can be used to address complex questions in cancer biology.

This book constitutes revised and selected papers from the 6th International Symposium on Security and Privacy in Social Networks and Big Data, SocialSec 2020, held in Tianjin, China, in September 2020. The 38 full papers presented in this volume were carefully reviewed and selected from a total of 111 submissions. The papers are organized according to the topical sections on big data security; social networks; privacy-preserving and security.

The two-volume set CCIS 1142 and 1143 constitutes thoroughly refereed contributions presented at the 26th International Conference on Neural Information Processing, ICONIP 2019, held in Sydney, Australia, in December 2019. For ICONIP 2019 a total of 345 papers was carefully reviewed and selected for publication out of 645 submissions. The 168 papers included in this volume set were organized in topical sections as follows: adversarial networks and learning; convolutional neural networks; deep neural networks; embeddings and feature fusion; human centred computing; human centred computing and medicine; human centred computing for emotion; hybrid models; image processing by neural techniques; learning from incomplete data; model compression and optimization; neural network applications; neural network models; semantic and graph based approaches; social network computing; spiking neuron and related models; text computing using neural techniques; time-series and related models; and unsupervised neural models.

This book constitutes the refereed proceedings of the 14th International Conference on Advanced Data Mining and Applications, ADMA 2018, held in Nanjing, China in November 2018. The 23 full and 22 short papers presented in this volume were carefully reviewed and selected from 104 submissions. The papers were organized in topical sections named: Data Mining Foundations; Big Data; Text and Multimedia Mining; Miscellaneous Topics.

This book brings together for the first time the complete theory of data based neurofuzzy modelling and the linguistic attributes of fuzzy logic in a single cohesive mathematical framework. After introducing the basic theory of data based modelling new concepts including extended additive and multiplicative submodels are developed. All of these algorithms are illustrated with benchmark examples to demonstrate their efficiency. The book aims at researchers and advanced professionals in time series modelling, empirical data modelling, knowledge discovery, data mining and data fusion.

"This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

Accurate estimation, diagnosis, and prevention of COVID-19 is a global challenge for healthcare organizations. Innovative measures can introduce and implement AI, and Mathematical Modeling applications. This book provides insight into the recent advances of applications, statistical methods, and mathematical modeling for the healthcare industry. This book covers the state-of-the-art applications of AI and Machine Learning in past epidemics, pandemics, and COVID-19. It offers recent global case studies, and discusses how AI and statistical methods, initiatives, and applications such as Machine Learning, Deep Learning, Correlation and Regression Analysis play a major role in the prediction, diagnosis, and prevention of a pandemic. It will also focus on how AI and statistical applications can facilitate and restructure the healthcare system. This book is written for Researchers, Students, Professionals, Executives, and the general public.

The two-volume set LNCS 11751 and 11752 constitutes the refereed proceedings of the 20th International Conference on Image Analysis and Processing, ICIAP 2019, held in Trento, Italy, in September 2019. The 117 papers presented were carefully reviewed and selected from 207 submissions. The papers cover both classic and the most recent trends in image processing, computer vision, and pattern recognition, addressing both theoretical and applicative aspects. They are organized in the following topical sections: Video Analysis and Understanding; Pattern Recognition and Machine Learning; Deep Learning; Multiview Geometry and 3D Computer Vision; Image Analysis, Detection and Recognition; Multimedia; Biomedical and Assistive Technology; Digital Forensics; Image processing for Cultural Heritage.

The proceedings set LNCS 12891, LNCS 12892, LNCS 12893, LNCS 12894 and LNCS 12895 constitute the proceedings of the 30th International Conference on Artificial Neural Networks, ICANN 2021, held in Bratislava, Slovakia, in September 2021.* The total of 265 full papers presented in these proceedings was carefully reviewed and selected from 496 submissions, and organized in 5 volumes. In this volume, the papers focus on topics such as computer vision and object detection, convolutional neural networks and kernel methods, deep learning and optimization, distributed and continual learning, explainable methods, few-shot learning and generative adversarial networks. *The conference was held online 2021 due to the COVID-19 pandemic.

The two-volume set LNCS 7951 and 7952 constitutes the refereed proceedings of the 10th International Symposium on Neural Networks, ISNN 2013, held in Dalian, China, in July 2013. The 157 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in following topics: computational neuroscience, cognitive science, neural network models, learning algorithms, stability and convergence analysis, kernel methods, large margin methods and SVM, optimization algorithms, variational methods, control, robotics, bioinformatics and biomedical engineering, brain-like systems and brain-computer interfaces, data mining and knowledge discovery and other applications of neural networks.

This book constitutes the refereed proceedings of the 9th International Conference on Advances in Brain Inspired Cognitive Systems, BICS 2018, held in Xi'an, China, in July 2018. The 83 papers presented in this volume were carefully reviewed and selected from 137 submissions. The papers were organized in topical sections named: neural computation; biologically inspired systems; image recognition: detection, tracking and classification; data analysis and natural language processing; and applications.

The eight-volume set LNCS 12901, 12902, 12903, 12904, 12905, 12906, 12907, and 12908 constitutes the refereed proceedings of the 24th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2021, held in Strasbourg, France, in September/October 2021.* The 531 revised full papers presented were carefully reviewed and selected from 1630 submissions in a double-blind review process. The papers are organized in the following topical sections: Part I: image segmentation Part II: machine learning - self-supervised learning; machine learning - semi-supervised learning; and machine learning - weakly supervised learning Part III: machine learning - advances in machine learning theory; machine learning - attention models; machine learning - domain adaptation; machine learning - federated learning; machine learning - interpretability / explainability; and machine learning - uncertainty Part IV: image registration; image-guided interventions and surgery; surgical data science; surgical planning and simulation; surgical skill and work flow analysis; and surgical visualization and mixed, augmented and virtual reality Part V: computer aided diagnosis; integration of imaging with non-imaging biomarkers; and outcome/disease prediction Part VI: image reconstruction; clinical applications - cardiac; and clinical applications - vascular Part VII: clinical applications - abdomen; clinical applications - breast; clinical applications - dermatology; clinical applications - fetal imaging; clinical applications - lung; clinical applications - neuroimaging - brain development; clinical applications - neuroimaging - DWI and tractography; clinical applications - neuroimaging - functional brain networks; clinical applications - neuroimaging – others; and clinical applications - oncology Part VIII: clinical applications - ophthalmology; computational (integrative) pathology; modalities - microscopy; modalities - histopathology; and modalities - ultrasound *The conference was held virtually.

Graph-structured data is ubiquitous throughout the natural and social sciences, from telecommunication networks to quantum chemistry. Building relational inductive biases into deep learning architectures is crucial for creating systems that can learn, reason, and generalize from this kind of data. Recent years have seen a surge in research on graph representation learning, including techniques for deep graph embeddings, generalizations of convolutional neural networks to graph-structured data, and neural message-passing approaches inspired by belief propagation. These advances in graph representation learning have led to new state-of-the-art results in numerous domains, including chemical synthesis, 3D vision, recommender systems, question answering, and social network analysis. This book provides a synthesis and overview of graph representation learning. It begins with a discussion of the goals of graph representation learning as well as key methodological foundations in graph theory and network analysis. Following this, the book introduces and reviews methods for learning node embeddings, including random-walk-based methods and applications to knowledge graphs. It then provides a technical synthesis and introduction to the highly successful graph neural network (GNN) formalism, which has become a dominant and fast-growing paradigm for deep learning with graph data. The book concludes with a synthesis of recent advancements in deep generative models for graphs—a nascent but quickly growing subset of graph representation learning. This thesis deals with two important and very timely aspects of the future power system operation - assessment of demand flexibility and advanced demand side management (DSM) facilitating flexible and secure operation of the power network. It provides a clear and comprehensive literature review in these two areas and states precisely the original contributions of the research. The book first demonstrates the benefits of data mining for a reliable assessment of demand flexibility and its composition even with very limited observability of the end-users. It then illustrates the importance of accurate load modelling for efficient application of DSM and considers different criteria in designing DSM programme to achieve several objectives of the network performance simultaneously. Finally, it demonstrates the importance of considering realistic assumptions when planning and estimating the success of DSM programs. The findings presented here have both scientific and practical significance; they gained her BSc and MSc degrees in electrical engineering from the University of Belgrade in 2011 and 2012 respectively. She graduated with her PhD from the University of Manchester. She has presented at several conferences, and has won runner-up prizes in poster presentation at three. She has authored or co-authored more than 40 journal, conference and technical papers. provide a basis for further research, and can be used to guide future applications in industry.

This three-volume set LNCS 12888, 12898, and 12890 constitutes the refereed conference proceedings of the 11th International Conference on Image and Graphics, ICIG 2021, held in Haikou, China, in August 2021.* The 198 full papers presented were selected from 421 submissions and focus on advances of theory, techniques and algorithms as well as innovative technologies of image, video and graphics processing and fostering innovation, entrepreneurship, and networking. *The conference was postponed due to the COVID-19 pandemic.

The sixteen-volume set comprising the LNCS volumes 11205-11220 constitutes the refereed proceedings of the 15th European Conference on Computer Vision, ECCV 2018, held in Munich, Germany, in September 2018. The 776 revised papers presented were carefully reviewed and selected from 2439 submissions. The papers are organized in topical sections on learning for vision; computational photography; human analysis; human sensing; stereo and reconstruction; optimization; matching and recognition; video attention; and poster sessions.

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