

1. Record Nr.	UNINA9910627248403321
Autore	Sevakula Rahul Kumar
Titolo	Improving Classifier Generalization : Real-Time Machine Learning based Applications / / by Rahul Kumar Sevakula, Nishchal K. Verma
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-19-5073-3
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (181 pages)
Collana	Studies in Computational Intelligence, , 1860-9503 ; ; 989
Disciplina	629.8
Soggetti	Machine learning Computational intelligence Pattern recognition systems Machine Learning Computational Intelligence Automated Pattern Recognition
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to classification algorithms -- Methods to improve generalization performance -- MVPC – a classifier with very low VC dimension -- Framework for reliable fault detection with sensor data -- Membership functions for Fuzzy Support Vector Machine in noisy environment -- Stacked Denoising Sparse Autoencoder based Fuzzy rule classifiers -- Epilogue.
Sommario/riassunto	This book elaborately discusses techniques commonly used to improve generalization performance in classification approaches. The contents highlight methods to improve classification performance in numerous case studies: ranging from datasets of UCI repository to predictive maintenance problems and cancer classification problems. The book specifically provides a detailed tutorial on how to approach time-series classification problems and discusses two real time case studies on condition monitoring. In addition to describing the various aspects a data scientist must consider before finalizing their approach to a classification problem and reviewing the state of the art for improving classification generalization performance, it also discusses in detail the authors own contributions to the field, including MVPC - a classifier

with very low VC dimension, a graphical indices based framework for reliable predictive maintenance and a novel general-purpose membership functions for Fuzzy Support Vector Machine which provides state of the art performance with noisy datasets, and a novel scheme to introduce deep learning in Fuzzy Rule based classifiers (FRCs). This volume will serve as a useful reference for researchers and students working on machine learning, health monitoring, predictive maintenance, time-series analysis, gene-expression data classification.

2. Record Nr.	UNINA9910966760203321
Titolo	Innovation and invention in medical devices : workshop summary / / Kathi E. Hanna ... [et al.] editors ; based on a workshop of the Roundtable on Research and Development of Drugs, Biologics, and Medical Devices, Board on Health Sciences Policy, Institute of Medicine
Pubbl/distr/stampa	Washington, D.C., : National Academy Press, 2001
ISBN	0-309-18320-0 1-280-18409-4 9786610184095 0-309-56588-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (112 p.)
Collana	Compass series
Altri autori (Persone)	HannaKathi E
Disciplina	681
Soggetti	Medical instruments and apparatus Medical innovations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	""Innovation and Invention In Medical Devices""; ""Copyright""; ""Preface""; ""Contents""; ""1 Introductory Overview ""; ""OVERVIEW""; ""CHALLENGES TO INNOVATION""; ""REGULATORY ISSUES""; ""PAYMENT ISSUES""; ""VALUE AND CONSEQUENCES FOR INNOVATION""; ""CONCLUSIONS""; ""2 Keynote Session ""; ""HISTORICAL PERSPECTIVE ON IOM'S ROLE IN PROVIDING A FORUM FOR DISCUSSION""; ""A

REGULATORY PERSPECTIVE"; "AN INDUSTRY PERSPECTIVE: CHALLENGES IN THE DEVELOPMENT AND REGULATION OF DRUG-DEVICE COMBINATION PRODUCTS"; "AN EVALUATOR'S PERSPECTIVE" "INNOVATION AND INVENTION IN MEDICAL DEVICES: IMPLANTABLE DEFIBRILLATORS" "GENERAL DISCUSSION OF THE KEYNOTE SESSION"; "3 The Nature of Medical Innovation "; "THE INNOVATIVE PROCESS FOR MEDICAL DEVICES: A NASA PERSPECTIVE"; "Medical Device Case Studies"; "Cardiac Monitor"; "Heart Imaging System"; "Heart Assist Pump"; "Telemedicine Instrumentation Pack"; "Pill Telemetry Technologies"; "Benefits of the NASA Process"; "ENDOVASCULAR DEVICES"; "GENE ARRAYS"; "INHALED INSULIN"; "IMAGING THE MICROVASCULATURE"; "GENERAL DISCUSSION OF THE NATURE OF MEDICAL INNOVATION" "4 Sources and Support of Medical Devices Innovation " "AN OVERVIEW OF PUBLIC AND PRIVATE FACTORS AFFECTING MEDICAL DEVICE INNOVATION"; "THE FEDERAL RESEARCH ROLE"; "THE FEDERAL REGULATORY ROLE"; "THE ACADEMIC ROLE IN INNOVATION"; "THE ACADEMIC HEALTH CENTER ENVIRONMENT"; "THE ROLE OF SMALL MEDICAL COMPANIES"; "THE ROLE OF LARGE MEDICAL COMPANIES"; "THE ROLE OF PUBLIC AND PRIVATE CAPITAL"; "GENERAL DISCUSSION OF SOURCES AND SUPPORT OF MEDICAL DEVICE INNOVATION"; "5 The Challenges Ahead "; "UNMET CLINICAL NEEDS: CARDIOVASCULAR DISEASE" "UNMET CLINICAL NEEDS: CLINICAL TRIALS" "BARRIERS AND ISSUES IN DEVICE INNOVATION: REIMBURSEMENT"; "GENERAL DISCUSSION OF THE CHALLENGES AHEAD"; "6 Summary and Conclusions "; "Appendix A Workshop Agenda Roundtable on Research and Development of Drugs, Biologics, and Medical Devices"; "AGENDA"; "Opening Session"; "Keynote Session"; "Session I: The Nature of Medical Innovation"; "Session II: Sources and Support of Medical Device Innovation"; "Session III: The Challenges Ahead"; "Summary and Conclusions"; "Appendix B Speakers' Biographical Sketches " "Appendix C Registered Participants "

Sommario/riassunto

The objective of the workshop that is the subject of this summary report was to present the challenges and opportunities for medical devices as perceived by the key stakeholders in the field. The agenda, and hence the summaries of the presentations that were made in the workshop and which are presented in this summary report, was organized to first examine the nature of innovation in the field and the social and economic infrastructure that supports such innovation. The next objective was to identify and discuss the greatest unmet clinical needs, with a futuristic view of technologies that might meet those needs. And finally, consideration was given to the barriers to the application of new technologies to meet clinical needs.