PREFACE

ITHEA International Scientific Society (**ITHEA ISS**) is aimed to support growing collaboration between scientists from all over the world.

The scope of the books of the ITHEA ISS covers the area of Informatics and Computer Science.

ITHEA ISS welcomes scientific papers and books connected with any information theory or its application.

ITHEA ISS rules for preparing the manuscripts are compulsory.

ITHEA Publishing House is the official publisher of the works of the members of the ITHEA ISS.

Responsibility for papers and books published by ITHEA belongs to authors.

This book maintains articles on actual problems of classification, data mining and forecasting as well as natural language processing:

- new approaches, models, algorithms and methods for classification, forecasting and clusterisation. Classification of non complete and noise data;

- discrete optimization in logic recognition algorithms construction, complexity, asymptotically optimal algorithms, mixed-integer problem of minimization of empirical risk, multi-objective linear integer programming problems;

- questions of complexity of some discrete optimization tasks and corresponding tasks of data analysis and pattern recognition;

- the algebraic approach for pattern recognition - problems of correct classification algorithms construction, logical correctors and resolvability of challenges of classification, construction of optimum algebraic correctors over sets of algorithms of computation of estimations, conditions of correct algorithms existence;

- regressions, restoring of dependences according to training sampling, parametrical approach for piecewise linear dependences restoration, and nonparametric regressions based on collective solution on set of tasks of recognition;

- multi-agent systems in knowledge discovery, collective evolutionary systems, advantages and disadvantages of synthetic data mining methods, intelligent search agent model realizing information extraction on ontological model of data mining methods;

- methods of search of logic regularities sets of classes and extraction of optimal subsets, construction of convex combination of associated predictors that minimizes mean error;

- algorithmic constructions in a model of recognizing the nearest neighbors in binary data sets, discrete isoperimetry problem solutions, logic-combinatorial scheme in high-throughput gene expression data;

- researches in area of neural network classifiers, and applications in finance field;

- text mining, automatic classification of scientific papers, information extraction from natural language texts, semantic text analysis, natural language processing.

It is represented that book articles will be interesting as experts in the field of classifying, data mining and forecasting, and to practical users from medicine, sociology, economy, chemistry, biology, and other areas.

Papers in this book are selected from the ITHEA ISS Joint International Events of Informatics "ITA 2010":

CFDM	Second International Conference "Classification, Forecasting, Data Mining"
i·i·i	International Conference "Information - Interaction – Intellect"
i.Tech	Eight International Conference "Information Research and Applications"
ISK	V-th International Conference "Informatics in the Scientific Knowledge"
MeL	V-th International Conference "Modern (e-) Learning"
KDS	XVI-th International Conference "Knowledge - Dialogue – Solution"
CML	XII-th International Conference "Cognitive Modeling in Linguistics"
INFOS	Thirth International Conference "Intelligent Information and Engineering Systems"
NIT	International Conference "Natural Information Technologies"
GIT	Eight International Workshop on General Information Theory
ISSI	Forth International Summer School on Informatics

ITA 2010 took place in Bulgaria, Croatia, Poland, Spain and Ukraine. It has been organized by

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