

ITHEA International Scientific Society



ITA 2017

XX-th Joint International Scientific Events on Informatics

www.ithea.org

Summer Session: June 26 - July 14, 2017

Hotel "GLORIA" in the resort "St. Constantine & St. Helena", Varna, Bulgaria

Winter Session: December 18-20, 2017

Papers from ITA 2017 will be published by:

The ITHEA International Journal

"Information Theories and Applications" (IJ ITA)

The ITHEA International Journal

"Information Technologies and Knowledge" (IJ ITK)

The ITHEA International Journal

"Information Models and Analyses" (IJ IMA)

The ITHEA International Journal

"Information Content and Processing" (IJ ICP)

The ITHEA International Book Series

"Information Science and Computing" (IBS ISC)

The ITHEA International Digital Library with
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ITA 2017 is organized by:
ITHEA International Scientific Society (ITHEA ISS)
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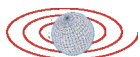
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- Community of Students and Postgraduates of Cybernetics Faculty of Taras Shevchenko National University of Kyiv (Ukraine)

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ITA 2017 Conferences

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Deadlines for ITA 2017

For all summer session conferences:

- Now:** reservation of hotel, submission of **registration forms** and **visa application forms** by e-mail: office@ithea.org and office@hit-tourism.com
- March 31, 2017:** submission of **paper** by the ITHEA ISS Submission Web System: <http://ita.ithea.org>
submission of proposals for ISSI **workshops** by e-mail: office@ithea.org
- April 15, 2017:** notification of the **paper acceptance** by the [ITHEA ISS Submission Web System](http://ita.ithea.org)
notification of the workshop **acceptance** to authors e-mail
- April 30, 2017:** submission of proposals for ISSI **doctoral consortium** by e-mail: office@ithea.org

For IM and MIM:

- November 30, 2017: submission of **abstract** by [ITHEA ISS Submission Web System](http://ita.ithea.org)
- December 10, 2017: notification of the **abstract acceptance** by the [ITHEA ISS Submission Web System](http://ita.ithea.org)
- March 31, 2018: submission of full **paper** by the [ITHEA ISS Submission Web System](http://ita.ithea.org): <http://ita.ithea.org>

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Responsibility for manuscripts published in ITHEA International Journals and Book Series belongs to authors. Please *get permission to reprint* any copyrighted material.

Not acceptable manuscripts will be returned to authors with recommendations. After authors' editing and refinement, if the manuscripts are reviewed positively, they will be published.

Manuscripts need to be formatted in DOC or TeX formats according the sample sheets given at:

- DOC template: http://www.ithea.org/conferences/ithea_doc_template.doc
- TeX template: http://www.ithea.org/conferences/ithea_tex_template.tex

Accepted manuscripts will be published by ITHEA® as follow:

- ***Regular papers or surveys in English or Russian*** up to 30 pages will be published in the peer reviewed ITHEA International Journals:
 - "Information Theories and Applications" (IJ ITA);
 - "Information Technologies and Knowledge" (IJ ITK);
 - "Information Models and Analyses" (IJ IMA);
 - "Information Content and Processing" (IJ ICP).
- ***Books*** (monographs or specialized thematically organized collections) will be published in the ITHEA International Book Series "Information Science and Computing" (IBS ISC).

Papers and Books published by ITHEA as well as ***Abstracts in English*** of all works are freely available online at the ITHEA ISS International Digital Library and Indexing System: <http://idr.ithea.org>.

Submission

The camera-ready copy of the manuscript should be received by the ITHEA Conference Submission System (<http://ita.ithea.org>) or by the ITHEA Journal Submission System (<http://ij.ithea.org>); e-mail for questions: office@ithea.org.

Please observe the rules and deadlines!

Submit registration cards and visa forms to e-mail: office@ithea.org.

Fees (including 20% VAT)

Registration Fee is **EURO 240** (fee 200 + VAT 40).

Registration fee includes both *publication fee* and *participation fee* per one paper.

Publication Fee is **EURO 120** per paper (fee 100 + VAT 20).

Publication fee includes *only one exemplar* of the issue in which the paper has been *published*.

Participation Fee is **EURO 120** per paper (fee 100 + VAT 20).

Participation fee includes *participation* for one person and permits *presentation of one paper* without publishing and *access* to conference events including summer school and ITHEA Evening.

Participation Fee for Doctoral Consortium is **EURO 60** per presented PhD (fee 50 + VAT 10).

Participation fee for Doctoral Consortium includes *participation* for one PhD student and permits *presentation of one PhD* with afterward publishing and *access* to all conference events and ITHEA Evening.

Sponsorship of 50% is applicable *only for a scientific paper* which meets *all of* following requirements:

- authors are from *Middle Income Countries* (<http://data.worldbank.org/income-level/MIC>);
- authors are *members of ITHEA ISS*. Membership is free (do it via www.ithea.org);
- paper is *not financed by any other scientific project or other source*;
- paper contains the *acknowledgement*:

"The paper is published with partial support by the ITHEA ISS (www.ithea.org) and the ADUIS (www.aduis.com.ua)"

Requests for sponsorship have to be sent to e-mail: office@ithea.org.

Accompanying Persons' Fee is **EURO 30** (fee 25 + VAT 5)

Accompanying persons' fee covers the organizing expenses and one ITHEA Evening. It does not cover excursions and other social events.

Additional exemplars

One additional journal number costs **EURO 12** (10 + VAT 2).

One additional book costs **EURO 24** (20 + VAT 4).

Post expenses:

Please, note that the *fees do not include post expenses*.

Post expenses depend of destination but are not less than **EUR 24** (20 + VAT 4).

Contact for ITA 2017: office@ithea.org

ITA 2017 is supported by:



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ITA 2017 SPECIAL HOTELS' PRICES (EURO)**Prices are in EURO****BO:** Bed Only**BB:** Bed and Breakfast**HB** (Half-Board): Bed, Breakfast and Dinner**FB** (Full-Board): Bed, Breakfast, Lunch and Dinner**ALL:** All inclusivePrices for Hotel Complex "**Gloria *****"**300m far from sea; ITA 2017 Conference place**

Resort "St. Constantine & St. Helena", Varna, Bulgaria

<http://gloria.golden-hotelbg.com/>

<i>Period:</i>	15.06 – 10.07.2017
	BB
Person in a double room	EURO 23
Single room	EURO 31
ADD to HB	EURO 7
ADD to All	EURO 12

Transfer airport - hotel:

- car (1-4 sits): EURO 24 per car *in one direction*;
- minivan (4-7 sits): EURO 30 per bus *in one direction*.

To use special hotels' prices with **discounts** from the official prices for all hotels, participants have to make reservation and payment **only** by HIT-Tourism Tour Operator.

Send your requests for reservation and questions**to both e-mails: office@hit-tourism.com and office@ithea.org .**

If you not receive answer in a couple of days, please resend request!

NOTE: After pointed hotels' deadlines prices for booking will rise !

VISAS for ITA 2017

To receive **Bulgarian visa** for ITA 2017 Summer Session one has to have:

- **Voucher** from HIT-Tourism Tur Operator for hotel accommodation. Send your requests for hotel reservation to both e-mails: office@hit-tourism.com and office@ithea.org .
- **Invitation letter** from ITHEA. In order to obtain invitation letter, fill visa and registration forms and send them to office@ithea.org.
- **Other documents** that Bulgarian embassy in your contry requires.

International passports must be **valid** at least **six months** after the conference time.

Preliminary Time Tables for ITA 2017 Plenary Sessions in Bulgaria

(Conference room of the hotel “Gloria”)

Working languages are pointed in the information for corresponded conferences (see next pages).

ITA 2017 Summer Session

		10:00–12:00	12:00–14:00	14:00–16:00	16:00–17:00	17:00–19:00
23.06.17 - 25.06.17		arrivals				
26.06.17	Monday	KDS	<i>Break</i>	KDS	<i>Break</i>	ISSI
27.06.17	Tuesday	CFDM	<i>Break</i>	GIT	<i>Break</i>	ISSI
28.06.17	Wednesday	i-i-i	<i>Break</i>	i-i-i	<i>Break</i>	ISSI
29.06.17	Thursday	AIM	<i>Break</i>	TFIM	<i>ITHEA EVENING</i>	
30.06.17	Friday	KEBIDH	<i>Break</i>	KEBIDH	<i>Break</i>	ISSI
01.07.17	Saturday	CSAI	<i>Break</i>	CSAI	<i>Break</i>	ISSI
02.07.17	Sunday	i.TECH	<i>Break</i>	i.TECH	<i>Break</i>	ISSI
03.07.17	Monday	i.TECH	<i>Break</i>	i.TECH	<i>Break</i>	ISSI
04.07.17	Tuesday	NIT	<i>Break</i>	NIT	<i>Break</i>	ISSI
05.07.17	Wednesday	NIT	<i>Break</i>	NIT	<i>Break</i>	ISSI
06.07.17	Thursday	NIT	<i>Break</i>	NIT	<i>Break</i>	ISSI
07.07.17	Friday	NIT	<i>Break</i>	NIT	<i>Break</i>	ISSI
08.07.17	Saturday	INFOS	<i>Break</i>	INFOS	<i>Break</i>	ITHEA SIG
09.07.17	Sunday	ITHEA SIG	<i>Break</i>	ITHEA SIG	<i>Break</i>	ITHEA SIG
10.07.17	Monday	ISSI	<i>Break</i>	ISSI	<i>Break</i>	ISSI
11.07.17	Tuesday	ISSI	<i>Break</i>	ISSI	<i>Break</i>	ISSI
12.07.17	Wednesday	ISSI	<i>Break</i>	ISSI	<i>Break</i>	ISSI
13.07.17- 14.07.17		departures				

ITA 2017 Winter Session

	10:00–12:00	12:00–14:00	14:00–17:00
18.12.17	IM	<i>Break</i>	IM
19.12.17	MIM	<i>Break</i>	MIM
20.12.17	MIM	<i>Break</i>	IM



KDS 2017

XXIII-th International Conference

Knowledge - Dialogue - Solution

June 26 – July 09, 2017, Varna (Bulgaria)

Aims and Scope

The Conference continues the series of annual international KDS events organized by V.M. Glushkov Institute of Cybernetics of National Academy of Sciences of Ukraine and Association of Developers and Users of Intelligent Systems (ADUIS).

Topics of interest

- Applied Information Systems
- Data Mining and Knowledge Discovery
- Decision Making
- Intelligent information technology
- Interdisciplinary Scientific Research
- Logical Inference
- NL Text Processing
- Neural and Growing Networks
- Mathematical methods research of complex systems
- Modern (e-) Learning and intelligent systems
- Philosophy and Methodology of Informatics
- Problems of Computer Intellectualization

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Language

The official languages of the conference are Russian and English.



CFDM 2017

IX-th International Conference

Classification, Forecasting, Data Mining

June 26 – July 09, 2017, Varna (Bulgaria)

Aims and Scope

The conference is devoted to the current research and applications in the fields of Classification, Clustering, Pattern Recognition, Forecasting, Features Processing, Transformations, Data Mining, and Knowledge Discovery.

Topics of interest

Pattern Recognition and Forecasting
Machine Learning
Data Mining
Classification and Clustering

Inductive Modeling
Features Processing and Transformations
Applications
Image, Speech, Document and Signal Analysis
Knowledge-Based Decision Support Systems

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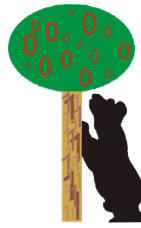
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Language

The official languages of the conference are Russian and English.



NIT 2017

VIII-th International Conference

Natural Information Technologies

July 03 – July 09, 2017, Varna (Bulgaria)

Aims and Scope

Natural Computing can be broadly defined as the development of computer programs and computational algorithms using metaphorical inspiration from system and phenomena that occur in the natural world. Fundamentals of Natural Computing: Basic Concepts, Algorithms, and Applications present a wide-ranging survey of novel techniques and important applications of nature-based computing.

The goal of NIT International Conference is to offer a platform to critically assess present findings in the field, and to outline future developments in nature-inspired computing.

Original papers describing current research in the areas given below are invited, but other relevant areas also welcome. Papers in application areas of the same fields will also be considered.

Topics of interest

Topics of interest include, but are not limited to:

NATURAL COMPUTING

- Cellular Computing
- DNA Computing
- Evolutionary Computation
- Membrane Computing
- Molecular Computing
- Neural Computing
- Quantum Computing

APPLICATIONS OF NIT

- Bioinformatics
- Data Mining and Knowledge Discovery
- Decision Making and Decision Support Systems
- Evolvable Hardware
- Information Retrieval
- Knowledge Management
- Multi-agent Structures and Systems
- Natural Language Processing
- Robotics
- Synthetic Biology
- Web Intelligence

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e-mail: nit@etsisi.upm.es

Language

The official language of the conference is English.

For contacts

- Juan Castellanos, e-mail: jcastellanos@fi.upm.es
- Krassimir Markov, e-mail: office@ithea.org



MeL 2017

XII-th International Conference

Modern (e-) Learning

June 28 – July 01, 2017, Varna (Bulgaria)

Aims and Scope

The conference is devoted to discussion of current research and applications regarding the basic directions of Modern (e-) Learning: Philosophy, Methodologies and Technologies.

Topics of interest

Philosophy and Methodology of the Modern (e-) Learning

- Accreditation and Validation of Modern (e-) Learning Materials
- Learning Communities and Virtual Spaces for Modern (e-) Learning Communities
- Copyright Regulations and Intellectual Property
- Evolution in Teacher Roles through Technology
- Experience and Problems of Implementation of Distance Learning Systems
- Informatics of the Modern Learning
- Instructional Design Theories of Modern (e-) Learning
- Institutional Issues on Technology-based Learning
- Interaction of Classical and Modern (e-) Learning
- Knowledge Market
- Modern (e-) Learning Paradigms
- Organizational Problems of Distance Learning
- Pedagogical and Organizational Frameworks of Modern (e-) Learning
- Pedagogical Approaches - Classical and Modern Didactic Principles of Modern (e-) Learning
- Policies on Technology-based Learning
- Psychological and Ergonomic Aspects of Modern (e-) Learning
- Social Aspects of Modern (e-) Learning
- Standardization of the Modern (e-) Learning Materials
- Standards and Quality Requirements for the Certification and Assessment of the Learners' Progress
- Teaching Aspects of Modern (e-) Learning

Modern e-Learning Technologies

- Information Retrieval and Visualization in e-Learning
- Multimedia Educational Systems
- Media for Learning in Multicultural Settings
- Mobile e-Learning Applications
- P2P e-Learning Applications
- Social Aspects in Collaborative e-Learning Systems
- Standardization in e-Learning Technologies (Learning Objects, Designs, Modeling Languages)
- Technology-based Blended, Distance and Open Learning
- Technology-Facilitated Learning in Complex Domains
- Technologies for advanced Teacher Training
- Technology and Human Resource Issues
- Using AI/Semantic Web Technologies for Personalized and Contextual Learning
- Web-based Educational Information Systems

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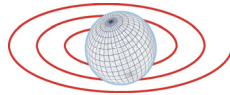
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Language

The official languages of the conference are Russian and English.



TFIM 2017

VII-th International Conference

Theoretical Foundations of Informational Modeling

June 28 – July 01, 2017, Varna (Bulgaria)

Aims and Scope

The conference objective is to present and discuss current achievement in the fields of the Theoretical Foundations of Informational Modeling.

The basic objective of the conference is the formulation and analysis of theories and paradigms for the description and solution of practical problems, based on the understanding of their underlying informational and mathematical structures.

Topics of interest

- Information Structures and Theories
- Mathematical Structures and Theories
- Philosophical Foundational of Informational Modeling
- Methods and Tools for Informational Modeling
- Domain-specific Modeling
- Meta-models and Meta-modeling
- Modeling Languages and Standards
- Empirical Software Engineering
- Model-Driven Architecture
- Model Transformation Techniques and Languages
- Syntax and Semantics of Modeling Languages

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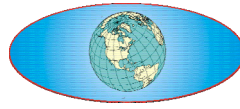
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Yevgeniy Bodyanskiy (Ukraine)

Language

The official language of the conference is English and Russian.



AIM 2017

VII-th International Conference

Advances in Informational Modeling

June 28 – July 01, 2017, Varna (Bulgaria)

Aims and Scope

The conference is devoted to the advances in the fields of concepts, methods, languages and tools of Informational Modeling and Simulation and its applications. The aim of the Conference is to exchange new ideas and expertise among researches in industry, science and education.

Topics of the conference

- Concepts, Paradigms, Approaches and Modeling Languages
- Workflow Management Systems
- Business Process Modeling
- Software Process Modeling
- Application Development Methods and Best Practices in Industry, Education and Science
- Business Process Management and Engineering
- Model-Driven Project Management

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Language

The official languages of the conference are English and Russian.



KEBIDH 2017

IV-rd International Conference

Knowledge Engineering in BioMedical Informatics and Digital Health

June 28 – July 03, 2017, Varna (Bulgaria)

Organized by:

Prof. Dr. Abdel-Badeeh M. Salem

Head of Bio-Medical Informatics & e-health Group
Artificial Intelligence & Knowledge Engineering Labs
Faculty of Computer and Information Sciences
Ain Shams University, Cairo, Egypt

Contact: absalem@cis.asu.edu.eg ; abmsalem@yahoo.com

<http://www.shams.edu.eg/staff/profile.php?action=show&pid=8256>



Aims and Scope

KEBIDH 2017 will bring researchers, practitioners, developers, and users to present their latest ideas and research and in all areas of neuroinformatics, bioinformatics, medical informatics, bioengineering, machine learning and artificial intelligence in all areas of digital health and life sciences.

KEBIDH 2017 will provide a forum for the exchange of ideas between knowledge engineers, biologists, physicians and computer scientists. Papers related to methodologies, techniques and applications in bioinformatics, medical informatics, telemedicine, and Health care are especially solicited.

Topics of interest

The topics of interest include, but are not limited to:

- Health Care Information Systems
- Clinical Information Systems
- Medical Image Processing and Techniques
- Medical Intelligent Systems for different medical tasks
- Medical Expert Systems
- Applications in Medical and Health Sciences
- Bioinformatics and Biostatistics
- Telemedicine Software, Portals, Devices and Telehealth
- Web-based and Remote Medicine
- Data Mining and Knowledge Discovery in Medicine
- Machine Learning-based Medical Systems
- Artificial Intelligence Techniques in Health Sciences
- Medical Databanks, Databases, and Knowledge Bases
- Neurocomputing in Medicine
- Ontology and Medical Information Science
- Bioethics and Health informatics

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 Xiao-Zhi Gao, School of Electrical Engineering, Aalto University, Finland

Language

The official language of the conference is English.



i.TECH 2017

XV-th International Conference

Information Technologies and Software Engineering

June 30 – July 09, 2017, Varna (Bulgaria)

Supported by ITHEA Software Engineering Forum http://idr.ithea.org/tiki-view_forum.php?forumId=1

Aims and Scope

The conference is aimed is to represent research results and development activities in fields of Information Technologies and Software Engineering.

Topics of interest

Information Technologies

- Information Systems
- Mobile and Multimedia Systems
- Distributed and Telecommunication Systems
- Cyber Security

Software Engineering

- Fundamentals of Software Engineering
 - Software Engineering Standards Discussions and Reviews
 - Theoretical Aspects of Software Engineering
 - Domain Analysis and Engineering
 - Software Modeling Standards (UML, BPMN and Others)
 - Patterns in Software Engineering
- Software Life Cycle Management
 - Software Development Life Cycles Processes
 - Tools, Techniques, Algorithms and Methods for Management Software Development Life Cycle
 - AGILE and Model-Driven Development (MDD)
 - Software Product Lines
 - Reverse Software Engineering
 - Software and System Interoperability
- Software Applications and Development
 - Service-oriented Software Engineering
 - Distributed Application Development
 - Mobile Development
 - Software Technologies

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Vladimir Ryazanov (Russia)
Volodymyr Opanasenko (Ukraine)

Language

The official languages of the conference are English and Russian.



CSAI 2017

Second International Conference

Cognitive Science - Approaches and Results towards Artificial Intelligence

July 01 – July 03, 2017, Varna (Bulgaria)

Aims and Scope

The conference is centered on approaches and results obtained through the study of Cognition and Consciousness, their interpretation and application towards Artificial Intelligence.

Topics of interest

Researches, models in Cognitive Science as well as applications are welcomed.

The topics of interest include but are not limited to:

- Mental representations and mental operations
- Learning and Memory
- Perception in humans, animals, and machines (vision and machine vision, auditory perception, etc.)
- Natural language (psycholinguistics, language acquisition, conceptualization, meaning, etc.) and Natural Language Processing
- Emotions and emotion recognition
- Sentiment analyses
- Cognition and Consciousness
- Social cognition and consciousness
- Rethinking intelligence, including artificial

This large spectrum includes results and models in cognitive science, cognitive neuroscience, biometrics, brain imaging etc. as well as developed applications in neurocomputing, signal processing, pattern recognition, brain-computer interfaces, biometric technologies for human identification, models of society and human behavior etc.

Steering Committee

Velina Slavova, Department of Computer Science, New Bulgarian University, Sofia, Bulgaria

Krassimir Markov, Department of Informational Modeling, Institute of Mathematics and Informatics at BAS, Sofia, Bulgaria

Program Committee

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Hussein Samani	Institute for Cognitive Sciences Studies, Tehrān, Iran
Alona Soschen	Chief Scientist cognitive linguistics, Amerge Software Inc., Otawwa, Canada
Vassil Vassilev	School of Computing, London Metropolitan University, London, UK

Language

The official language of the conference is English.



INFOS 2017

X-th International Conference Intelligent Information and Engineering Systems

July 03 – July 09, 2017, Varna (Bulgaria)

Aims and Scope

The conference is devoted to the discussion of current research, development and applications of the knowledge-based intelligent information and engineering systems.

Topics of interest

Theoretical foundations:

Genetic Algorithms and Evolutionary Computing
Expert Systems, Hybrid Intelligent Systems
Fuzzy Techniques and Systems
Intelligent Agents and Multi-Agent Systems
Data Mining, Knowledge Acquisition
Knowledge Discovery, Knowledge-Based Systems
Knowledge Representation and Management
Natural Language Processing, Speech Understanding
Neural Networks, Machine Learning
Software engineering and computing techniques

Intelligent Applications:

Artificial Intelligence in Modeling and Simulation
Bioinformatics using Intelligent and Machine Learning
Business Intelligence Systems
Human-Robot interaction, Image Processing
Industrial Control and Monitoring
Intelligent Agents Applications
Intelligent Manufacturing Systems
Intelligent Natural Language Systems
Intelligent Robots
Intelligent Tutoring Systems
Intelligent Web Mining and Applications
Medical and Diagnostic Systems
Mobile Computing and Systems
Multi-Media Intelligent Information Systems

Steering Committee

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Krassimir Markov, Institute on Information Theories and Applications, (Bulgaria)

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Language

The official language is English.



i-i-i 2017

VIII-th International Conference

Information - Interaction - Intellect

July 04 – July 09, 2017, Varna (Bulgaria)

Aims and Scope

The conference is devoted to discussion of current research and applications regarding the intelligent systems development:

Topics of interest

- Artificial Engineering
- Decision Making
- NL Text Processing
- Intelligent Technologies in Control and Design
- Multi-agent Structures and Systems
- Neural Networks

Steering Committee

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Yevgeniy Bodyanskiy (Ukraine)
Yury Zaychenko (Ukraine)

Language

The official languages of the conference are Russian and English.



GIT 2017

XV-th International Conference

General Information Theory

July 05 – July 09, 2017, Varna (Bulgaria)

Aims and Scope

The conference objective is to present and discuss current achievement in the fields of the General Information Theory.

General Information Theory (GIT) is considered here not only as a pure theoretical discipline. While matter and energy are the foundation of material World, information is the foundation of the mental world as well as of the interactions in alive beings and within their communities. It is the leading factor in evolution and genetics. It is the basis of intellectual activity. Studying intelligence, we should take broader approach discovering the role of information, generally speaking, in life. The time has come to work out more uniform and general, deeper understanding of information processes which support the noosphere.

In this, broader sense, we should again and again turn our attention to the philosophy, interrelations between material and mental, correlate the notion of information in communication, biology, humanitarian areas and the physics of micro world.

We strongly believe that the progress in Artificial Intelligence is tightly tied with our deeper understanding of informational processes, in general. The conference is dedicated to this broad issue.

Topics of interest

Include, but are not limited to the main areas of GIT: (1) Theory of the Information, (2) Theory of the Information Subject (INFOS), and (3) Theory of the Information Interaction (INFORACTION):

Philosophy

- Philosophical background: material and mental – their coexistence and cooperation the role of humanitarian and natural science knowledge
- Creation of paradigms by intellectual systems
- Information and knowledge
- Information and life
- Non-forceful interaction

Cognitology, Gnoseology and Semiotics

- Theory and methodology of World cognition by intellectual systems and communities
- Intellectual instruments of cognition: hypothesis, theories, experimental verification and falsification
- Role of knowledge systems: knowledge, experience, beliefs, conventions, prejudices, religions, myths, formal and metaphorical reasoning consciousness and self-consciousness
- Semiotics of knowledge acquisition and model construction
- Evolution and informational processes

Modern Physics

- Physics of information processes and informational background of physics
- What give quantum mechanics and other theories of micro world to our understanding of information exchange; principle of non locality, “spooky action at a distance”

Noosphere

- Noosphere and its informational component, simulated objects with different noosphere statuses
- AI systems' creation within the frame of integrated interaction with environment and goal oriented activity

Humanitarian Aspects

- Modeling Informational interaction in Nature and society: physical, social systems (psychology, eggregors, sociopsychology) and beyond.

Steering Committee

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Krassimir Markov (Bulgaria)
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Rafael Yusupov (Russia)
Vassil Sgurev (Bulgaria)
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Yevgeniy Bodyanskiy (Ukraine)

Language

The official languages of the conference are English and Russian.



ISSI 2017

XI-th International Summer School on Informatics

June 26 – July 12, 2017, Varna (Bulgaria)

Aims and Scope

The Summer School of informatics is devoted to discussion of current researches, applications and education regarding the basic directions of information technologies, and business informatics:

- **Theoretical Foundations of Informatics:** Conceptions, Modern approaches of Software Development, and Advanced Information Technologies;
- **Tools and Applications:** Tools for Information Modeling, Applied Systems for Information Service, Information Access Methods and Collaboration Tools, Information Security and Reliability, New customer engagement models enabled by Informatics Tools;
- **Informatics of/in Education (IE):** IE Conceptions, including relation to other/traditional fields of study, Computer Aided IE, Methodology of IE.

Steering Committee

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Elena Chebanyuk (Ukraine)
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Koen Vanhoof (Belgium)
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Lyudmila Lyadova (Russia)

Luis Fernando de Mingo (Spain)
Natalia Ivanova (Russia)
Olexii Voloshyn (Ukraine)
Stoyan Poryazov (Bulgaria)

Languages

The official languages of the Summer School are English and Russian.

Certificates

After passing finally tests successfully listeners of workshops will obtain *certificate* about training.

Doctoral consortium

Doctoral consortium proposes to PhD student opportunity to represent research results to ITHEA scientific council reviewers and discuss them in warm friendly atmosphere.

Also you may obtain constructive advices about fundamental research, relating to your PhD topic. It will allow you to improve your research ground to adopt it for collaboration of modern tools and environments variety.

To participate at doctoral consortium event prepare paper, reflecting main results of your PhD. It should be from 8 to 10 pages. Rules for preparing paper manuscript are the same as preparing papers to journals.

Manuscript should be submitted before 30 days to starting of ITA 2017. Then it will be resend to three council members, having experience both in fundamental research and aquanting with achievement in industry for detail aquaintes. Then author has to present his work at ITA 2017 during 30 minutes. After this, the constructive notes from the reviewers will be discussed.

After presenting and polishing, manuscript may be published in ITHEA International Journals.

The cost of doctoral concorcium event for author is 60 euro to be paid directly at conference desk.

After presenting scientific results author obtain ITHEA certificate about approbation of his work.

ITHEA reviewers that participate at PhD consideration also obtain certificate for consideration of scientific work in Internation doctoral consortium.

Workshops

Till January 24, 2017, four workshops have been proposed: General Information Theory, Artificial Intelligence, Software Engineering, Fractal and Multifractal Analysis.

New workshops may be proposed till March 31, 2017.

Annotations**Workshop on General Information Theory**

Chair: Krassimir Markov, Institute of Mathematics and Informatics at BAS, ITHEA Institute of Information Theories and Applications, Bulgaria

Advances in General Information Theory

Abstract: There exist several common theoretical information paradigms in the Information Sciences. May be, the most popular is the approach based on the generalization of the Shannon's Information Theory [Shannon, 1949; Lu, 1999]. Another approach is the attempt to be synthesized in a common structure the existing mathematical theories, which are applicable for explanation of the information phenomena [Cooman et al, 1995]. Besides of this, we need to point the diligence of the many researchers to give formal or not formal definitions of the concept "information". At the end, there exist some works that claim for theoretical generality and aspire to be a new approach in the Information Science, but theirs authors should clear up what they really talk about.

The development of GIT had started in the period 1977-1980. The first publication, which represents some elements of GIT, was published in 1984 [Markov, 1984]. The fundamental notion of the GIT is the concept "Information". All other concepts are defined based on this definition. In 1988, the not formal definition of the concept of Information was published in [Markov, 1988]. It became as a fundamental definition for the General Information Theory [Markov et al, 1993; Markov et al, 2003a; Markov et al, 2003b; Markov et al, 2004; Markov et al, 2007].

The presented in this workshop General Information Theory (GIT) is based only on primary consideration of the world as variety of entities, which are formed by relationships between entities that form lower levels. GIT is built by three specialized theories: Theory of Information, Theory of Infos, and Theory of Inforaction.

Workshop on Artificial Intelligence

Chair: Abdel-Badeeh M. Salem, Professor of Computer Science, Head of Medical Informatics and Knowledge Engineering Research Labs, Faculty of Computer and Information sciences, Ain Shams University. Abbasia, Cairo, Egypt. <http://net.shams.edu.eg/27.htm> , abmsalem@yahoo.com , absalem@cis.asu.edu.eg

Lecture: Knowledge Computing and Engineering in Biomedical Informatics and Healthcare

Abstract: The field of knowledge computing (KC) has become the most challenging area in the last several years. KC deals with the development of intelligent computing and knowledge-based systems in which knowledge and reasoning play pivotal role. KC consists of three main areas, namely: Document Engineering (DE), Knowledge Engineering (KE), and Reasoning Techniques (RT). KE includes; knowledge acquisition, expert systems, ontologies, knowledge-based systems, knowledge compilation, shells and tools, methodologies, modeling, knowledge management, knowledge discovery, and knowledge representation techniques. The aim of this talk is to make an overview of some of KC techniques and approaches and their applications in biomedical informatics and healthcare. The talk presents the following techniques and applications: (a) case-based reasoning approach for cancer and heart diagnosis, (b) ontological engineering for breast cancer knowledge management, and (c) mining patient data using rough sets theory to determine thrombosis disease.

Lecture: Web-Based Ontology for Expert Systems

Abstract: Expert system (ES) is an intelligent system incorporating a knowledge base and inference mechanism. It is a highly specialized piece of intelligent software that attempts to duplicate the function of an

expert in some field of expertise. Expert systems were originally developed to solve ill-defined problems and well-defined problems that are not efficiently solved with algorithmic approaches. The ES acts as a smart advisor or consultant in the domain of interest, capturing the heuristic knowledge of one or more experts. Its strength lies in its ability to be put to practical use when an expert is not available. From the artificial intelligence (AI) point of view, expert systems paradigm include the following areas of research: (a) knowledge-representation and management techniques, (b) knowledge modeling, (c) intelligent tools, programming languages and shells, (d) inference techniques, (e) reasoning methodologies, (f) machine learning, and (g) user interface technologies.

On the other side, ontological engineering is one of the very efficient approaches for knowledge management. Ontology is the foundation of describing a domain of interest and it consists in a collection of terms organized in a hierarchical structure that shape the reality. The main objective of using ontologies is to share knowledge between computers or computers and human. Most of the usages of ontologies in the field of AI are related to development of intelligent systems and knowledge based systems. These types of ontologies include a small number of concepts and their main objective is to facilitate reasoning tasks. This talk presents the developing of web-based ontology for expert systems paradigm. The developed ontology was encoded in OWL-DL format using the Protégé-OWL editing environment.

Lecture: Exploiting Artificial Intelligence Technology in Education and Learning

Abstract: The field of artificial intelligence in education (AIE) has become the most challenging area in the last several years. It includes the disciplines; cognitive and social psychology, computer science, empirical psychology, software and knowledge engineering. The goal of the AIE is to deliver knowledge-based systems which can be used in real teaching, learning and training situations. AI gives these systems added computing capability, allowing them to exhibit more intelligent behavior. Many types of these systems are in existence today and are applied to different domains and tasks. This lecture discusses the use of AI technologies in intelligent tutoring systems (ITS) and e-learning. Particularly, the lecture presents three AI methodologies, namely; case-based reasoning, data mining and knowledge discovery, and ontological engineering from e-Learning perspective. In addition, the lecture presents some examples of the developed systems by the author and his colleagues at Artificial Intelligence and Knowledge Engineering Research Labs, Ain Shams University, Egypt.

Workshop on Software Engineering

Supported by: **ITHEA Software Engineering Forum:** http://idr.ithea.org/tiki-view_forum.php?forumId=1

Chair: Elena Chebanyuk, National Aviation University, Kyiv, Ukraine

ISSI Software engineering workshop general topics

- Theoretical Aspects of Software Engineering
- Tools, Techniques, Algorithms and Methods for Management Software Development Life Cycle
- Software Applications and Development
- Software technologies for mobile and WEB-development

Topics of the software engineering lectures in the 2017 year:

- Benefits of Game Development in AGILE Approach using Unity3D
- Principles of designing distributed ASP.NET applications based on MVC (Model View Controller) architectural pattern

Masterclass: Benefits of Game Development in AGILE Approach using Unity3D

Abstract: Masterclass is devoted to peculiarities of game development process using Unity 3D in AGILE approach.

Firstly, peculiarities of requirement analysis are shown. UML diagrams can't cover all aspects of game scenarios. Tutorial illustrates role and good practices for composing of concept documents and approaches for quickly prototyping games using Unity. Also tricks for raising effectiveness of designing scenes that are based

on graphical pipeline rendering, are shown. Game prototyping procedure and concept document allows specifying requirements exactly.

Then, some peculiarities in software designing process should be considered. Unity is designed in component-oriented architectural style. Some architectural solutions, that are better deal with Unity architecture, will be shown in this tutorial.

Thus, in turn, there are some peculiarities in software development, such as scripts interacting, accessing of data and GameObjects. Also successful and quick game development process is based on technologies of existing assets and packages reuse.

Reverse engineering procedures performed to acquaint with third-party project functionality and packages are discussed. Some approaches to define Unity packages and export them from third-party software for adoption to developed project are proposed. Also tutorial touches some peculiarities of software components reuse in cross-platform development.

Summary:

- Peculiarities of requirement analysis in game development
- Peculiarities of game designing
- Peculiarities of software reuse procedure and software packages creation and distribution in game development

Keywords: Concept Document, Mobile Application, Game Prototyping Approaches, Asset, Asset Store, Component-Oriented Architectural Style, Prototype Design Pattern, Flyweight Design Pattern, State Design Pattern, Reverse Engineering; Game camera, Collisions, Events, Unity Asset, Unity Package, 3D project, Game physics, MonoBehaviour, Sprite animation.

Lecture: Principles of Designing Distributed ASP.NET Applications Based on MVC (Model-View-Controller) Architectural Pattern

Abstract: Will be available soon.

Workshop on Fractal and Multifractal Analysis

Chair: Lyudmyla Kirichenko, Kharkiv National University of Radioelectronics, Ukraine

Fractal and Multifractal Analysis workshop general topics:

- basic notions and properties of self-similar and multifractal stochastic processes and time series
 - estimation methods of fractal characteristics
- and etc.

Lectures consider:

- Multifractal time series analysis: basic principles and practical application
- Recurrence plots: basic principles and practical application

Lecture keywords: self-similar and multifractal time series.

Lecture: Multifractal time series analysis: basic principles and practical application

Abstract: Will be available soon.

Lecture: Recurrence plots: basic principles and practical application

Abstract: Will be available soon.



VII-th International (Tele-) Conference
Informational Modeling
December 18 - 20, 2017, Internet

The conference is supported by ITHEA Software Engineering Forum
http://idr.ithea.org/tiki-view_forum.php?forumId

Aims and Scope

The conference is devoted to the representing of current research in the fields of concepts, methods, languages and tools of Informational Modeling and Simulation and their applications.

The aim of the Conference is exchange the ideas and expertise among researches in industry, science and education and not formal coordination of their efforts.

Topics of the conference

1. AGILE and Model-Driven Development
 - Processing and Analysis of Software Models
 - Modeling Languages and Tools
 - Software Model Checking and Verification
 - Model-Driven Engineering
 - Model Execution and Simulation
 - Metamodels and Metamodeling
2. Informational Modeling and Simulation (IM&S) - Concepts, Paradigms, Approaches and Languages
 - Modeling and Simulation (M&S) Body of Knowledge
 - Knowledge Based IM&S. IM&S languages
 - IM&S Heterogeneous Structures and Scalability. High Level Architecture (HLA), Agent Base IM&S
3. IM&S Efficiency Enhancements
 - Methods for Efficiency Estimation, Comparison and Enhancement, Cooperative, Parallel and Distributed IM&S Efficiency
 - Accuracy enhancement and simulation speeding Simulation Experiments Design
 - Real and IM&S Information Storage and Transmission Formats Data Analysis and Comparison Methods
 - Data Mining
 - Dynamic Adaptation and Personalization of the Human–Computer–Model Interaction
4. IM&S Efficacy Estimation and Life Cycle Management
 - Meta-modeling. Econometrical Meta-models M&S Efficacy Indicators
 - M&S Detailness and Life Cycle Optimization in respect of Designed Product Life Cycle
 - Management, Emergency Cases
 - Verification and Validation in IM&S Life Cycle.
5. IM&S Application Development Methods and Best Practices in Industry, Education and Science
 - IM&S Impact in Industry
 - IM&S in Science and Technology (S&T), Specifics in Information and Communication S&T
 - IM&S in and for Education
 - IM&S in Knowledge Market & Business Informatics

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Language

The official languages of the conference are English and Russian.



MIM 2017

VII-th International (Tele-) Conference

Mathematics of Informational Modeling

December 18 - 20, 2017, Internet

Aims and Scope

The basic objective of the conference is the formulation and analysis of adequate mathematical models for the description and solution of practical engineering and related problems based on the understanding of their underlying informational structures, i.e. the mathematical foundation of information science (informatics). It includes Mathematical Logic (for Computer Science), Empirical Engineering, Theory on Algorithms, Information Theory, Coding Theory, Cryptology, Mathematical foundation of network processes and so on.

Topics of interest

- Automata theory and models
- Chaos and self-organization models
- Complex systems modeling and complexity of algorithms
- Intuitionist logic and Substructural logic
- Learning and Intelligence algorithms
- Modeling, Simulation, and Emulation: Mathematical theory, Formal verification
- Multisets theory and its applications
- Parallel algorithms, scientific computation and clouds
- Theory of named sets and its applications
- Uncertainty, Intuitionist Fuzzy Sets: Theory and Applications
- Cryptographic methods and protocols, Reliable and Secure Telecommunications
- Discrete geometry, Distances and Similarities, Tomography
- Financial mathematics, serious games
- Generalized nets and models
- Connectionism and Neural nets, Wavelet-neurons, and Emerging modeling objects

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Language

The official languages of the conference are English and Russian.

Applications under Android operating system for Tablet PCs and Smart phones about Varna

Application feature	Detailed information
	Direct Link http://www.lmobile.com.ru/varna-map-offline-1741120.html Purpose <i>offline and online map of Varna</i> Application allows observing Varna map both in online and offline modes. Using online map one can do the next: Application description 1. Add chosen objects into favorites 2. Add your key points to Varna map 3. Searching of objects 4. Routing defining
	Direct Link https://play.google.com/store/apps/details?id=com.gpsmycity.android.u161&hl=uk Purpose <i>Varna city guide following your interests</i> This handy application presents you several self-guided walking tours to see the best of the Varna, Bulgaria, and it comes with detailed tour route maps and powerful navigation features to guide you from one sight to the next. No need to hop on a tour bus or join a tour group; now you can explore all of the best attractions on your own, at your own pace, and at a cost that is only a fraction of what you would normally pay for a guided tour. Application description Walking tours included in this application are: * Varna Orientation Tour (8 sights) * Museums in Varna (7 sights) * Religious Sights (7 sights) * Shopping Tour (8 sights) * Sea Garden Tour (8 sights) * Varna Nightlife (8 sights) * Daily Life in Varna (7 sights)
	Direct Link https://play.google.com/store/apps/details?id=com.travel.bulgaria.ru Purpose <i>Good Bulgarian phrase-book</i> Application description Bulgarian phrasebook will help tourists in any situation. The program will be useful for beginners (Bulgarian learners).
	Direct Link https://play.google.com/store/apps/details?id=com.funeasylearn.phrasebook.bulgarian&hl=ru Purpose <i>Excellent Bulgarian phrase-book with pictures</i> Application description Bulgarian phrasebook when phrases are divided by topics. The program will be useful for starting communication in Bulgarian.
	Direct Link https://play.google.com/store/apps/details?id=com.tectrice.thebestofbulgaria Purpose <i>Application opening Bulgaria with the heart</i> Application description Bulgarian nature sights and a lot of interesting and useful facts

Important information for participants in ITA 2017, Varna, Bulgaria

Please read carefully!

1. Contacts

Mobile numbers of the Organizing committee to be used during conference time:
+359 878 89 07 07, +359 878 89 07 25

2. Travel to the conference

2.1. From Varna

The Hotel "Gloria" of the "St. Constantine and St. Helena" resort is located less than 7 km by the way from Varna to the "Golden Sands" resort.

From Varna Airport and Bus station: bus No.: 409 to bus stop "Botanical Garden" (Botanicheska gradina).

From Varna Town Center the busses are: No.: 8 to the Center of "St. Constantine and St. Helena" resort and No.: 9 to bus stop "Botanical Garden" (Botanicheska gradina).

Please, see the map on the next page.

2.2. From Sofia

Besides the direct flight to Varna and/or the transfer flight from Sofia, there are two possible variants to get from Sofia to Varna:

- by train from the Central Railway Station: www.bdz.bg

- by bus from the Central Bus Station (right beside the Central Railway Station: www.centralnaavtogara.bg)

2.3. In Sofia

The metropolitan line from the Sofia Airport to the Central Railway Station and the Central Bus Station is still under construction, so the transportation to these stations may be:

- By bus – 84 or 284 from the Airport to "Hotel Pliska" stop, and then 213 or 214 to the Central Station; Note: Luggage bigger than the average will require an extra ticket as well.

- Shuttle-bus: from the airport to the station. The price is 1.60 BGN (possible additional taxes for the luggage).

- Taxicab: **we do not recommend** using this transport, or in case you do always check the prices on the stickers on the windows, because the foreigners especially are often offered incredibly high prices.

3. Medicines

We want to remind if you use some special medicines not to forget them.

4. Currency

The fixed official exchange rate: 1 EUR = 1.95583 BGN (leva).

In the change offices the exchange rate may vary from 1.9 to 1.95.

When you change money, please be careful when choosing the change office. At the airport usually the rates are not preferable.

Some change offices use on their front tables fixings which aren't used for the standard procedures – it might be for write the fixing on the front table, which is not the real rate for usual exchange (it may be the rate for checks or for exchanged amount more than 10,000 lv.). Please, always read the all the notices (usually written with smaller letters) and ask the clerk for the exact total you'll receive from the exchange.

We recommend exchanging not more than 50 EUR or USD at a time.

Caution!

Be careful with your money, documents and other important personal belongings.

Make sure you keep them safe with yourself, not putting them in your luggage, as you can easily become a victim of pickpockets or thieves otherwise.

Please be alert in the city public transport as well as in the bus/train when approached by strangers and never leave your baggage unattended.

