ITHEA International Scientific Society

ITA 2018

XXI-st Joint International Scientific Events on Informatics
www.ithea.org

Summer Session: July 01 - July 06, 2018
Hotel "GLORIA" in the resort "St. Constantine & St. Helena", Varna, Bulgaria

Papers from ITA 2018 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 Journals are indexed by Worldcat, ROAD Directory of Open Access scholarly Resources, Google Scholar, CiteseerX and ITHEA Index.

ITA 2018 is organized by:

ITHEA International Scientific Society (ITHEA ISS)
Association of Developers and Users of Intelligent Systems (ADUIS)
in tight collaboration with:

- FIS Foundations of Information Science (Spain)
- Spanish Network on Biomolecular and Biocellular Computing (Spain)
- National Academy of Sciences of Ukraine
- Community of Students and Postgraduates of Cybernetics Faculty of Taras Shevchenko
    National University of Kyiv (Ukraine)

- Institute of Information Theories and Applications FOI ITHEA (Bulgaria)
- V.M.Glushkov Institute of Cybernetics of NASU (Ukraine)
- Research Institute of Applied Semiotics of Tatarstan Academy of Sciences (Russia)
- St.Petersburg Institute for Informatics and Automation of RAS (Russia)
- Instituto Aragonés de Ciencias de la Salud (Spain)
- Dorodnicyn Computing Centre of the Russian Academy of Sciences (Russia)
- Institute of Informatics Problems of the RAS (Russia)
- Institute for Informatics and Automation Problems, NAS (Armenia)
- Institute of Mathematics of SD RAN (Russia)
- Institute of Mathematical Problems and Systems of NASU (Ukraine)

- Taras Shevchenko National University of Kyiv (Ukraine)
- Universidad Politecnica de Madrid (Spain)
- National Aviation University, Kyiv (Ukraine)
- New Bulgarian University, Sofia (Bulgaria)
- Ain Shams University, Cairo (Egypt)
- Rzeszow University of Technology (Poland)
- Educational-scientific complex "Institute for applied system analysis" (Ukraine)
- Kharkiv National University of Radio Electronics (Ukraine)
- Hasselt University (Belgium)
- University of Calgary (Canada)
- Ben-Gurion University (Israel)
- Astrakhan State University (Russia)
- Varna Free University "Chernorizets Hrabar" (Bulgaria)
- School of Information Technologies and Cybersecurity of V.S. Martinovsky Institute of
    Refrigeration Cryotechnologies and Ecoenergetics at Odessa National Academy of
    Food Technologies, (Ukraine)

ITA 2018 Conferences

KDS 2018		XXIV-th International Conference **Knowledge - Dialogue - Solution**
CFDM 2018		X-th International Conference **Classification, Forecasting, Data Mining**
MeL 2018		XIII-th International Conference **Modern (e-) Learning**
IM 2018		VIII-th International Conference **Informational Modeling**
KEBIDH 2018		V-th International Conference **Knowledge Engineering in BioMedical Informatics and Digital Health**
i.TECH 2018		XVI-th International Conference **Information Technologies and Software Engineering**
i-i-i 2018		IX-th International Conference **Information - Interaction – Intellect**
GIT 2018		XVI-th International Conference **General Information Theory**
ISSI 2018		XII-th International Summer School on **Informatics**
CSAI 2018		Third International Conference **Cognitive Science - Approaches and Results towards Artificial Intelligence**
NIT 2018		VIII-th International Conference **Natural Information Technologies**
INFOS 2018		XI-th International Conference on **Intelligent Information and Engineering Systems**

Preliminary Time Tables for ITA 2018 Plenary Sessions

	10:00–12:00	12:00–14:00	14:00–16:00	16:00–17:00	17:00–19:00
25.06.18 - 30.06.18	**ITHEA SIG**	*Break*	**ITHEA SIG**	*Break*	**ITHEA SIG**
01.07.18 Sunday	**KDS**	*Break*	**KDS**	**ISSI**	**IM**
02.07.18 Monday	**CFDM**	*Break*	**CFDM**	**ISSI**	**MeL**
03.07.18 Tuesday	**i.TECH**	*Break*	**i.TECH**	**ISSI**	**MeL**
04.07.18 Wednesday	**KEBIDH**	*Break*	**KEBIDH**	*ITHEA EVENING*	
05.07.18 Thursday	**NIT**	*Break*	**NIT**	**ISSI**	**i-i-i**
06.07.18 Friday	**INFOS**		**INFOS**	**ISSI**	**INFOS**
07.07.18 - 10.07.18	**ITHEA SIG**	*Break*	**ITHEA SIG**	*Break*	**ITHEA SIG**
21.07.18 - 22.07.18 - Sofia	**CSAI**	*Break*	**CSAI**	*Break*	**CSAI**

Deadlines for ITA 2018

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, 2018: 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, 2018: notification of the **paper acceptance** by the ITHEA ISS Submission Web System
notification of the workshop **acceptance** to authors e-mail

April 30, 2018: submission of proposals for ISSI **doctoral consortium** by e-mail: office@ithea.org

Manuscripts

ITHEA rules for preparing the manuscripts are compulsory.
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 .

International Summer School on Informatics

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.

Languages

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

Sertificates

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

Doctoral consortium

Doctoral consortium proposes to PhD student oportunity to represent research results to ITHEA scientific counsil reviewers and disscuss 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 enviroments 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 staring of ITA 2018. Then it will be resend to three counsil memebers, having experience both in fundamental research and aquanting with achievement in industry for detail aquaintes. Then author has to present his work at ITA 2018 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 sertificate about approbation of his work.

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

Fees (including 20% VAT)

Registration Fee is **EURO 360** (fee 300 + VAT 60).
>   Registration fee includes both *publication fee* and *participation fee* per one paper.

Publication Fee is **EURO 180** per paper (fee 150 + VAT 30).
>   Publication fee includes *only one exemplar* of the issue in which the paper has been *published*.

Participation Fee is **EURO 180** per paper (fee 150 + VAT 30).
>   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 80** per presented PhD (fee 75 + VAT 15).
>   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 2018: *office@ithea.org*

VISAS for ITA 2018

To receive Bulgarian visa for ITA 2018 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.

Accomodation for ITA 2018 Summer Session, Varna, Bulgaria

HIT-Tourism Tur Operator, Varna, Bulgaria
Licence number: 04482
www.hit-tourism.com ;   *e-mail:* *office@hit-tourism.com* ;
+359 52 361 900;   +359 89945185 Skype: hit_mira

ITA 2018 SPECIAL HOTELS' PRICES (EURO)

Prices for Hotel Complex "**Gloria *****"
300m far from sea;   ITA 2018 Conference place
Resort "St. Constantine & St. Helena", Varna, Bulgaria
http://gloria.golden-hotelbg.com/
Booking and pay till March 31, 2018 !

Period:	**15.06 – 10.07.2018**
	BB
Person in a double room	EURO 23
Single room	EURO 31
ADD to HB	EURO 7
ADD to All	EURO 12
Children are free of charge.	

Prices for Hotel "**Rusalka ****",
300m far from sea; 20m far from ITA 2018Conference place
http://www.hotelroussalka.com/
Booking till March 31, 2018 !

Period:	**15.06 – 15.07.2018**
	BB
Person in a double room	EURO 15
Single room	EURO 20
ADD to HB	EURO 6
ADD to FB	EURO 12

Prices for Hotel "**Atlant*****",
50m far from sea; 200m far from ITA 2018 Conference place
http://hotelatlant.com/
Booking till March 31, 2018

Period:	15.06 - 04.07.2018	05.07 - 26.08.2018
	BB	**BB**
Person in a double room	EURO **23**	EURO **30**
Person in a Single room	EURO **46**	EURO **60**
ADD to HB	EURO **7**	EURO **7**

Prices for Hotel "**KOSARA ****"
500m far from sea; 300m far from ITA 2018 Conference place
www.kosara.dir.bg
Booking till March 31, 2018!

Period:	01.06 - 30.06.2018	01.07 - 25.08.2018
	BO	**BO**
Person in a double room	EURO **10**	EURO **12**
Single room	EURO **16**	EURO 2**0**
Apartment 2+2 Persons with Living-room and Kitchen	EURO **45**	EURO **45**
Bungalow 6 Persons	EURO **45**	EURO **45**

Prices for Hotel "**Sirius Beach ******",
10m far from sea; 1000m far from ITA 2018 Conference place
http://www.siriusbeach.com/
Booking till March 31, 2018

Period:	21.06 - 04.07.2018	05.07 - 16.08.2018
	All inclusive	**All inclusive**
Person in a double room – Sea view	EURO **57**	EURO **62**
Person in a double room – Park view	EURO **55**	EURO **60**
Single room	EURO **96**	EURO **100**

Prices for Hotel " **AQUA AZUR ******",
100m far from sea; 1000m far from ITA 2018 Conference place
www.aquaazur.com
Booking till March 31, 2018

Period:	16.06 - 05.07.2018	06.07 - 31.08.2018
	BB	**BB**
Person in a double room	EURO **31**	EURO **40**
Single room	EURO 44	EURO **61**
ADD to HB	EURO **8**	EURO **8**
ADD to FB	12	12

Prices for Hotel " **Ivanchov han ***** ",
150m far from sea; 1000m far from ITA 2018 Conference place
www.hanat-bg.com

Booking till March 31, 2018

Period:	20.06 - 14.07.2018	15.07 - 25.08.2018
	BB	**BB**
Person in a double room	EURO **22**	EURO **27**
Single room	EURO **30**	EURO **35**
ADD to HB	EURO **8**	EURO **8**
ADD to FB	12	12

Prices are in EURO   **HB** (Half-Board): Bed, Breakfast and Dinner
BO: Bed Only   **FB** (Full-Board): Bed, Breakfast, Lunch and Dinner
BB: Bed and Breakfast   **ALL**: All inclusive

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 !

  HIT-Tourism Tour Operator

ITA 2018 is supported by: **Srtukto Ltd.**

  LUXIT optical boutiques

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

Application feature	Detailed information	
Icon	Direct Link	http://www.1mobile.com.ru/varna-map-offline-1741120.html
	Purpose	***offline and online map of Varna***
	Application description	Application allows observing Varna map both in online and offline modes. Using online map one can do the next: 1. Add chosen objects into favorites 2. Add your key points to Varna map 3. Searching of objects 4. Routing defining

Icon	Direct Link	https://play.google.com/store/apps/details?id=com.gpsmycity.android.u161&hl=uk
	Purpose	***Varna city guide following your interests***
	Application description	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. 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)

Icon	Direct Link	https://play.google.com/store/apps/details?id=com.travel.bulgaria.ru
	Purpose	***Good Bulgarian phrase-book***
	Application description	Bulgarian phrasebook will help tourists in any situation. The program will be useful for beginners (Bulgarian learners).

Icon	Direct Link	https://play.google.com/store/apps/details?id=com.funeasylearn.phrasebook.bulgarian&hl=ru
	Purpose	***Excellent Bulgarian phrase-book with pictures***
	Application description	Bulgarian phrasebook when phrases are divided by topics. The program will be useful for starting communication in bolgarian.

Icon	Direct Link	https://play.google.com/store/apps/details?id=com.tectrice.thebestofbulgaria
	Purpose	***Application opening Bulgaria with the heart***
	Application description	Bulgarian nature sights and a lot of interesting and useful facts

Important information for participants in ITA 2018, 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.