UNIVERSITY OF PALERMO

The University of Palermo (UNIPA) was officially founded in 1806, although its earliest roots date back to 1498 when medicine and law were taught there. A little later in history, from the second half of the 16th century from their seat at the Collegio Massimo al Cassero, the Jesuit Fathers granted degrees in Theology and Philosophy - subjects in which they had been masters for over 200 years.

In 1767 they were expelled from the kingdom by King Ferdinand I, until 37 years later when they returned to take their seat - which in the meantime had been turned into the Regia Accademia.

At this time the same King Ferdinand decided to grant a worthy seat to the Accademia, moving its location to the Convent of the Teatini Fathers next to the Church of St. Giuseppe.

After the unification of Italy in 1860 the University of Palermo was modernised under the impetus of the chemist Stanislao Cannizzaro and the minister and specialist in Arab studies Michele Amari, more or less assuming its present appearance. Since 1984 the main building of the University, housing the Rector's office, is Palazzo Chiaramonte-Steri, one of the most important historical buildings in Palermo, built in 1307 and formerly the residence of the Chiaramonte. Not far from Palazzo Steri, on land formerly belonging to the Chiaramonte, the Botanical Gardens of Palermo constitute a further admirable pearl of the University.

Today, the University has grown to be an institution of about 2000 lecturers and 50,000 students in which research in all main fields of study is carried out. In the past few years the university has actively taken part in international cooperation programmes.
https://www.google.com/maps/d/viewer?mid=zss4xtiju5UQ.kAERfVInt8_A

MEETING
Wednesday, 22 June 2016
Sala delle Capriate
Main Building of UNIPA
Palazzo Chiaramonte-Steri, Piazza Marina, 61

MEETING
Thursday, 23 June 2016
Department of Mathematics and Computer Science (DMI)
Aula 4
Via Archifari, 34
CONFERENCE
Thursday, 23 June 2016
Aula Lanza at Botanic Garden
Herbarium Mediterraneum Panormitanum
Via Lincon, 2

CONFERENCE
Friday, 24 June 2016
Department of Mathematics and Computer Science (DMI)
Aula 4, 5, 7
Via Archirafi, 34
CONFERENCE OBJECTIVE

The CompSysTech’16 International Conference is organized by THE ASSOCIATION FOR COMPUTING MACHINERY (N.Y., USA) and by THE BULGARIAN ACADEMIC SOCIETY OF COMPUTER SYSTEMS AND INFORMATION TECHNOLOGIES and its OBJECTIVE is to intensify the information exchange of results in theoretical research and practical developments in this field.

CompSysTech’16 is organized under the patronage of:

- EUROPEAN COMMISSION - Education, Audiovisual and Culture Executive Agency
- John Atanasoff Union of Automation and Informatics
- Bulgarian Academy of Sciences;
- Bulgarian Chapter of IEEE Computer Society;
- Bulgarian Chapter of IEEE Communications Society.

INTERNATIONAL PROGRAMME COMMITTEE

- Honorary Co-Chairs:
  Kiril Boyanov (Member of BAS, DSc., Bulgaria)
  Vassil Sgurev (Member of BAS, DSc., Bulgaria)
- Chair:
  Boris Rachev (QUERBIE Inc. MA USA)
  Domenico Tegolo (UNIPA, Italy)
- Scientific Secretary:
  Dimo Dimov (BAS, Bulgaria)
- Secretary:
  Yordan Kalmukov (University of Ruse, Bulgaria)
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  Antonio Mendes (Portugal)  Leon Rothkrantz (Netherlands)
  Avram Eskenazi (Bulgaria)  Leoneed Kirilov (Bulgaria)
  Bojan Cestnik (Slovenia)  Lyudmil Dakovski (Bulgaria)
  Boris Novikov (Russia)  Marco Porta (Italy)
  Candelaria Hernández Goya (Spain)  Margarita Todorova (Bulgaria)
  Constantinos Pattichi (Cyprus)  Maria Jose Marcelino (Portugal)
  Dana Petcu (Romania)  Marite Kirikova (Latvia)
  Daniela Chuda (Slovakia)  Markus Helfert (Ireland)
  Diana Kalibatiene (Lithuania)  Martin Llamas-Nistal (Spain)
  Dimitris Karagiannis (Austria)  Michael Vassilakopoulos (Greece)
  Douglas Harms (United States)  Michal Krátký (Czech Republic)
  Erika Nazaruka (Latvia)  Mirjana Ivanovic (Serbia)
  Eugenijus Macikenas (Lithuania)  Neli Maneva (Bulgaria)
  Evtim Peytchev (United Kingdom)  Nikolay Mehandjiev (United Kingdom)
  Francisca Losavio (Venezuela)  Novruz Allahverdi (Turkey)
  George Totkov (Bulgaria)  Olegas Vasilecas (Lithuania)
  Georgi Gluhchev (Bulgaria)  Pavol Navrat (Slovakia)
  Georgi Todorov (Bulgaria)  Peter Stanchev (United States)
Grisha Spasov (Bulgaria) Pino Caballero-Gil (Spain)
Gundars Alksnis (Latvia) Radi Romansky (Bulgaria)
Hannu Jaakkola (Finland) Rebecca Bartlett (United Kingdom)
Heinz-Dietrich Wuttke (Germany) Ricardo Colomo-Palacios (Norway)
Hilda Tellioğlu (Austria) Roumen Nikolov (Bulgaria)
Howard Duncan (Ireland) Sebastiano Battiato (Italy)
Iliya Georgiev (United States) Stavros Nikolopoulos (Greece)
Ivan Jelinek (Czech Republic) Steve Beaty (United States)
Janis Grundspenkis (Latvia) Stoicho Stoichev (Bulgaria)
Janusz Jabłoñowski (Poland) Tadeusz Morzy (Poland)
Jaroslav Pokorny (Czech Republic) Timos Sellis (Australia)
Jiri Srba (Denmark) Tzvetomir Vassilev (Bulgaria)
Jukka Teuhola (Finland) Ville Leppänen (Finland)
Juliana Peneva (Bulgaria) Vladimir Lazarov (Bulgaria)
Karl Jones (United Kingdom) Yannis Manolopoulos (Greece)

♦ ORGANIZING COMMITTEE

- Co-Chairs:
  Angel Smrikarov (Bulgaria)
  Biagio Lenzitti (Italy)

- Secretary:
  Eugenia Dimitrova (Bulgaria)
  Cesare Valenti (Italy)

- Members:
  Stoyanka Smrikarova (Bulgaria) Giosuè Lo Bosco (Italy)
  Tzvetozar Georgiev (Bulgaria) Marco Alfano (Italy)
  Yordan Kalmukov (Bulgaria) Giuseppa Sciortino (Italy)
  Fabio Bellavia (Italy) Guido Averna (Italy)

♦ TOPICS

2. Computer Systems (Software).
4. Educational Aspects of Computer Systems and Technologies

CompSysTech’16 Co-Event –
Workshop „Advances in high performance services for digital, multilingual education (AHPISDME)“
REGISTRATION
for the CONFERENCE

Wednesday, 22 June 2016, 9:00
in front of Sala delle Capriate

Thursday, 23 June 2016, 9:00, 14:30
DMI, Aula 3

Friday, 24 June 2016, 9:00
DMI, Aula 3

Thursday, 23 June 2016, 15:00
Aula Lanza

OPENING
WELCOME
Chair: Domenico Tegolo

MUSICAL GREETING
PLENARY SESSION
Chair: Domenico Tegolo

PAOLO ATZENI
Head of Department of Engineering, Informatics and Automation, University Roma Tre, Italy
http://www.dia.uniroma3.it/~atzeni/

Data Modelling in the NoSQL World

SEBASTIANO BATTIATO
Department of Mathematics and Computer Science, University of Catania, Italy
http://www.dmi.unict.it/~battiato

Multimedia Forensics: discovering the history of multimedia contents. Recent trends and perspectives

DIMITAR JETCHEV
Section des Mathematiques SMA, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland

Secure operations on encrypted data for the cloud

DISCUSSIONS

17:00 – 18:00
in front of Aula Lanza
REGISTRATION
# Programme Summary

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<thead>
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<th>Time</th>
<th>Aula 4</th>
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<td><strong>Session A1</strong></td>
<td><strong>Session B1</strong></td>
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<td></td>
<td><strong>Software Engineering (1)</strong></td>
<td><strong>Image Processing &amp; Computer Vision</strong></td>
<td><strong>Workshop AHPISDME (1)</strong></td>
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<td>11:00 – 11:30</td>
<td><strong>COFFEE BREAK</strong></td>
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<td>11:30 – 13:30</td>
<td><strong>Session A2</strong></td>
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<td><strong>Software Engineering (2)</strong></td>
<td><strong>AI in Medicine and Healthcare</strong></td>
<td><strong>Workshop AHPISDME (2)</strong></td>
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<td><strong>Software Security &amp; Computer Networks</strong></td>
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<td>13:30 – 14:30</td>
<td><strong>LUNCH</strong></td>
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<td>14:30 – 16:30</td>
<td><strong>Session A3</strong></td>
<td><strong>Session B3</strong></td>
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<td><strong>Cloud Computing &amp; Distributed Systems</strong></td>
<td><strong>AI in Localization</strong></td>
<td><strong>Information Retrieval &amp; Language Processing</strong></td>
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<td><strong>Hardware</strong></td>
<td><strong>Biometrics</strong></td>
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<td>Number of papers: 1</td>
<td>Number of papers: 3</td>
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<tr>
<td>16:30 – 17:00</td>
<td><strong>THE BEST PAPERS AWARDS</strong></td>
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<td><strong>Aula 7</strong></td>
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All halls are on the Department of Mathematics and Computer Science
Session A1

Chair: Constantinos S. Pattichis
Co-Chair: Radi Romansky
Scientific Secretary: Diana Kalibatiene

Friday, 24th June 2016
09:00 – 11:00
Aula 4

SOFTWARE ENGINEERING (1)

   Diana Kalibatiene, Olegas Vasilecas, Vjaceslavs Bobrovs

2. An approach for allocation of shared resources in the rule-based business process simulation
   Toma Rusinaite, Olegas Vasilecas, Titas Savickas, Tadas Vysockis, Kesturis Normantas.

3. Games as Software – Similarities and Differences between the Implementation Projects
   Jussi Kasurinen

   Ville Ahti, Sami Hyrynsalmi, Olli Nevalainen

5. Compiler assisted dynamic allocation of finite hardware acceleration resources for parallel tasks
   Jari-Matti Mäkelä, Martti Forsell, Ville Leppänen

6. A Framework for Opening Data and Creating Advanced Services in the Health and Social Fields
   Marco Alfano, Biagio Lenzitti, Giosuè Lo Bosco, Davide Taibi

DISCUSSIONS

11:00 – 11:30
Coffee Break - Foyer
Session A2

Chair: Alfred Iwainsky
Co-Chair: Stefanie Östlund
Scientific Secretary: Princy Johnson

Friday, 24th June 2016
11:30 – 13:30
Aula 4

SOFTWARE ENGINEERING (2)

1. A Multimodal Fruition Model for Graphical Contents in Ancient Books
   Vito Gentile, Salvatore Sorce, Giuseppe Russo, Dario Pirrone, Antonio Gentile
   Vishnu Prashanth Murugan, Robert Scheffler, Gregor Wrobel, Dr. Matthias Pleßow
3. Diversity in Smartphone Usage
   Amhmed A. Bhih, Princy Johnson, Martin Randles

SOFTWARE SECURITY AND COMPUTER NETWORKS

1. Advances In Distributed Security For Mobile Ad Hoc Networks
   Jozef Filipek, Ladislav Hudec
2. A Model for Establishing Response-time Bounds to Prevent Malware Pandemics in Mobile Devices
   Stavros D. Nikolopoulos, Iosif Polenakis
3. On the Design of a Simple Network Resolver for DNS Mining
   Jukka Ruohonen, Ville Leppännen
4. A Survey on Aims and Environments of Diversification and Obfuscation in Software Security
   Shohreh Hosseinzadeh, Sampsa Rauti, Samuel Laurén, Jari-Matti Mäkelä, Johannes Holvitie, Sami Hyrynsalmi, Ville Leppännen

DISCUSSIONS

13:30 – 14:30
Lunch
Session A3

Chair: Ali Gungor
Co-Chair: Georgi Georgiev
Scientific Secretary: Alessandra De Paola

Friday, 24th June 2016
14:30 – 16:30
Aula 4

CLOUD COMPUTING AND DISTRIBUTED SYSTEMS

1. A Framework for Parallel Assessment of Reputation Management Systems
   Vincenzo Agate, Alessandra De Paola, Salvatore Gaglio, Giuseppe Lo Re, Marco Morana

2. Issues on Developing a Location Aware Game for Mobile Browsers
   Sinan Kaplan, Jouni Ikonen, Antti Knutas

3. SESAMO: An Integrated Framework for Gathering, Managing and Sharing Environmental Data
   Vincenzo Agate, Calogero Crapanzano, Alessandra De Paola, Salvatore Gaglio, Goffredo La Loggia

4. Home Energy Monitoring System based on Open Source Software and Hardware
   Evtim Peytchev, Mihail Lyaskov, Kostadin Popovski, Grisha Spasov

5. Cloud–Based System for Real Time Medication Monitoring
   Vencislav Venkov, Rosen Ivanov

HARDWARE

1. Handshake Controller for 3-alternative Conditional Transition
   Dimitar Tyanev, Yulka Petkova

DISCUSSIONS
Friday, 24th June 2016
09:00 – 11:00
Aula 5

IMAGE PROCESSING AND COMPUTER VISION

1. System for Automatic Camera Calibration Robust Against Blur and Lighting Conditions Changes
   Yulian Pastarmov

2. An innovative 3D color barcode - Intuitive and realistic visualization of digital data
   Mario Koddenbrock, Daniel Herfert, Frank Püschel, Cornelia Rataj, Matthias Melitzki

3. A multiscale approach to automatic and unsupervised retinal vessel segmentation using Self-Organizing Maps.
   Carmen Alina Lupascu, Domenico Tegolo

4. A Multi-spectral Stereo Method to Retrieve Cloud top Height applied to Geostationary Satellite images
   Anna Anzalone, Francesco Isgrò

5. The Exact (Rho,Theta)-Hough Transform -- Definition and Performance
   Dimo Dimov, Aleksandar Dimov

   Lacezar Licev, Karolina Feberova, Jan Tomecek, Jakub Hendrych

DISCUSSIONS

11:00 – 11:30
Coffee Break - Foyer
AI IN MEDICINE AND HEALTHCARE

1. Automatic detection system of micro sleeps of car drivers based on EEG analysis
   Leon Rothkrantz

2. Classification Experiments of DNA Sequences by Using a Deep Neural Network and Chaos Game Representation
   Riccardo Rizzo, Antonino Fiannaca, Massimo La Rosa, Alfonso Urso

3. An Expert System for Healthful and Dietary Nutrition
   Ivo Marinchev, Gennady Agre

4. Software Application for Smile Design Automation Using the Visagism Theory
   Boyan Yankov, Georgi Iliev, Dimitar Filchev, Galip Gurel, Braulio Paolucci, Adriano Shayder, Iva Misheva

5. Serious Gaming: Autonomy and Better Health for the Elderly
   Manolo Dulva Hina, Amar Ramdane-Cherif, Sébastien Dourlens

6. EXPO: A Modern NoSQL-based ebXML Registry for Health Information Systems
   Antonio Messina, Pietro Storniolo, Alfonso Urso

DISCUSSIONS

13:30 – 14:30
Lunch
Session B3

Chair: **Dimo Dimov**
Co-Chair: **Karl Jones**
Scientific Secretary: **Peter Filípek**

Friday, 24th June 2016
14:30 – 16:30
Aula 5

**AI IN LOCALIZATION**

1. **Optimizing Artificial Neural Network for Beacon Based Indoor Localization**
   *Filip Mazan, Alena Kovárová*

2. **Indoor Localization Based on Beacons and Calculated by Particle Filter**
   *Peter Filípek, Alena Kovárová*

3. **Beacon Based Localization Refined by Outputs from Mobile Sensors**
   *Matej Liskovec, Alena Kovárová*

4. **An approach for microscopic path finding and obstacle avoidance for blind and visually impaired people**
   *Rosen Ivanov*

**BIOMETRICS**

1. **Toward Posture Recognition with Touch Screen Biometrics**
   *Daniela Chudá, Kamil Burda*

2. **Fine-tuning Web Traffic Statistics by Deduplication and Splitting of Visitors Records Using Mouse Biometrics**
   *Peter Kratky, Daniela Chuda*

3. **Eye Tracking for Cultural Heritage: a Gaze-controlled System for Handless Interaction with Artworks**
   *Virginio Cantoni, Marco Porta, Lorenzo Merlano, Nahumi Nugrahaningsih*

**DISCUSSIONS**
Session C1

Chair: Margarita Todorova  
Co-Chair: Antonio Maratea  
Scientific Secretary: Sintija Petrovica

Friday, 24th June 2016
09:00 – 11:00
Aula 7

WORKSHOP
"Advances in high performance services for digital, multilingual education"
(AHPISDME 1)

1. **On the Use of Social Media In Distance Learning**  
   Leon Rothkrantz

2. **Commercial Off-the-Shelf Games as Learning Media**  
   Veljko Aleksić, Mirjana Ivanović, Zoran Budimac, Elvira Popescu

3. **Towards a Constructionist Serious Game Engine**  
   Adilson Vahldick, António José Mendes, Maria José Marcelino

4. **e-assessment – students' point of view**  
   Ásrún Matthiasdóttir, Hallgrímur Arnalds

5. **Codelnsights - Monitoring programming students' progress**  
   Nuno Gil Fonseca, Luís Macedo, António José Mendes

6. **Integrated education in e-learning design and development through synchronised assignments and assessments of courses**  
   Pencho Mihnev, Krassen Stefanov, Eliza Stefanova

DISCUSSIONS

11:00 – 11:30
Coffee Break - Foyer
Session C2

Chair: Hilda Telliolgu
Co-Chair: Rositsa Doneva
Scientific Secretary: Laurentiu Deaconu

Friday, 24th June 2016
11:30 – 13:30
Aula 7

WORKSHOP
"Advances in high performance services for digital, multilingual education"
(AHPISDME 2)

1. Increasing students’ academic results in e-course using educational recommendation strategy
   Martina Holenko Dlab, Natasa Hoic-Bozic
2. New Trends in Information Technologies and Their Integration in University Curricula: a Brief Study in the Context of the FETCH European Thematic Network
   Marco Porta, Betim Çiço, Peter Kaczmarski, Neki Frasher, Virginio Cantoni, Fernand Vandamme
3. Promoting Inclusive Informatics Education Through Bebras Challenge to All K-12 Students
   Valentina Dagienë, Gabrièlé Stupurienë, Lina Vinikienë
4. Modula-2 versus Java as the first programming language: Evaluation of students’ performance
   Miloš Savić, Mirjana Ivanović, Miloš Radovanović, Zoran Budimac
5. The Flipped Classroom Method: Lessons Learned from Flipping Two Programming Courses
   Antti Knutas, Antti Herala, Erno Vanhala, Jouni Ikonen
6. 3D Learning Tool for Measuring of Constructive and Geometrical Parameters of Turning Tools
   Galina Ivanova, Aleksandar Ivanov, Vasil Kozov
7. Personalized Educational Paths through Self-Modifying Learning Objects
   Georgi Pashev, Georgi Totkov, Hristina Kostadinova, Hristo Indzhov

DISCUSSIONS

13:30 – 14:30
Lunch
Session D

Chair: Suzana Loshkovska  
Co-Chair: Kemal Tutuncu  
Scientific Secretary: Diana Grigorova

Friday, 24th June 2016  
14:30 – 16:30  
Aula 7

INFORMATION RETRIEVAL & LANGUAGE PROCESSING

   Samira Ranaei, Antti Knutas, Juho Salminen, Arash Hajikhani

   Bujar Raufi, Florije Ismaili, Jaumin Ajdari, Xhemal

3. Hybrid approach to zero pronoun resolution in Bulgarian  
   Diana Grigorova

4. GI-learning: an optimized framework for grammatical inference  
   Pietro Cottone, Marco Ortolani, Gabriele Pergola

DISCUSSIONS
Friday, 24 June 2016, 16:30, DMI, Aula 7

The CHAIRS of the PROGRAMME COMMITTEE and the ORGANIZING COMMITTEE will bestow a CRYSTAL PRIZE to the authors of the best papers.

Friday, 24 June 2016, 17:15, DMI, Aula 7

Meeting of the PROGRAMME COMMITTEE and ORGANIZING COMMITTEE and the chairs of each sections of the CompSysTech’16
Photos from
UNIVERSITY OF PALERMO
Wednesday, 22 June 2016, 20:00

MEETING SOCIAL DINNER
KURSAAL KALHESA
Foro Umberto I, 21/A
http://www.kursaalkalhesa.com
Thursday, 23 June 2016, 20:00

CompSysTech’16 SOCIAL DINNER
GRAND HOTEL PIAZZA BORSA
Via dei Cartari, 18
http://www.piazzaborsa.it/index.php/en
Photos from
PALERMO