The 15th International Symposium on Symbolic and Numerical Algorithms for Scientific Computing

23rd – 26th September 2013
Timişoara, Romania

http://synasc.ro/

Organizers

**Department of
Computer Science**

*West University of Timişoara
(Timişoara, Romania)*

**Research Institute
e-Austria Timişoara**

(Timişoara, Romania)

**Research Institute for
Symbolic Computation**

*Johannes Kepler University
(Linz, Austria)*

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Numerical Computing

Yonghong Yao
Tianjin Polytechnic University, China

Ioan Rus
Babeş-Bolyai University, Romania

Distributed Computing

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University of Strasbourg, France

Karoly Bosa
Johannes Kepler University, Austria

Advances in the Theory of Computing

Mircea Marin

West University of Timisoara, Romania

Gabriel Istrate

Research Institute e-Austria Timisoara, Romania

Workshops Chairs

Agents for Complex Systems

Adina Magda Florea

Politehnica University of Bucharest, Romania

Costin Badica

University of Craiova, Romania

Iterative Approximation of Fixed Points

Vasile Berinde

North University Center at Baia Mare,Romania

Ioan Rus

Babeş-Bolyai University, Romania

Ştefan Măruşter

West University of Timişoara, Romania

Management of Resources and Services in Cloud and Sky Computing

Arnor Solberg

SINTEF, Norway

Dana Petcu

West University of Timişoara, Romania

Natural Computing and Applications

Siby Abraham

University of Mumbai, India

Dan Dumitrescu

Babeş-Bolyai University, Romania

HPC for Scientific Problems

Ralf Peter Mundani

Technische Universität München, Germany

Special Sessions and Tutorials Chairs

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Invited Speakers

Ivona Brandic
Vienna University of Technology, Austria

Gabriel Ciobanu
Romanian Academy, Institute of Computer Science, Iasi, Romania

Tetsuo Ida
University of Tsukuba, Japan

Jose Torres-Jimenez
CINVESTAV-Research 3C, Mexico

Leonardo de Moura
Microsoft Research, USA

Grigore Roşu
University of Illinois at Urbana-Champaign, USA

Dan Simovici
University of Massachusetts Boston, USA

Tutorial Speakers

Adrian Jackson
Edinburgh Parallel Computing Centre, UK

Ileana Streinu
Smith College and University of Massachusetts Amherst, USA

Stephen Watt
University of Western Ontario, Canada

Local Chairs

Isabela Drămnesc
West University of Timişoara, Romania

Silviu Panica
West University of Timişoara, Romania

Tracks

Monday, 23rd September

- Registration . . . . **(08:00)**
- **Opening** . . . . **(09:10/09:30)**
    (chair: Nikolaj Bjorner, room: A02)
- **Invited Talk** . . . . **(09:30/10:20)**
    (chair: Nikolaj Bjorner, room: A02)

    Model-Driven Decision Procedures for Arithmetic
    ### *Leonardo de Moura*
- Break . . . . **(10:20)**
- **Symbolic Computation** . . . . **(10:40/12:00)**
    (chair: Leonardo de Moura, room: A02)

    (10:40) A Piano Movers Problem Reformulated
    David Wilson, Russell Bradford, James Davenport and Matthew England

    (11:00) Identifying Features via Homotopy on Handwritten Mathematical Symbols
    Rui Hu and Stephen Watt

    (11:20) Common factors in fraction-free matrix reduction
    Johannes Middeke, David Jeffrey and Ahmed Almohaimeed

    (11:40) On Algebraic Preprocessing of Floating-point DAEs for Numerical Model
    Simulation
    Tateaki Sasaki and Tetsu Yamaguchi
- Lunch . . . . **(12:00)**
- **Invited Talk** . . . . **(13:10/14:00)**
    (chair: James Davenport, room: A02)

    Knot fold of regular polygons: computer assisted construction and verification
    ### *Tetsuo Ida*
- Break . . . . **(14:00)**

■ **Symbolic Computation** . . . . **(14:20/16:00)**
> (chair: Leonardo de Moura, room: A02)

- **(14:20)** Deciding Conjugacy in Thompson's Group F in Linear Time
  Nabil Hossain, Robert W. McGrail, Francesco Matucci and James Belk

- **(14:40)** On ladder operators for little q-Jacobi polynomials and their generalizations
  Galina Filipuk and Maciej Haneczok

- **(15:00)** On computing non-negative loop-free edge-bipartite graphs
  Grzegorz Marczak, Daniel Simson and Katarzyna Zajac

- **(15:20)** Efficient Computation of the Isotropy Group of a Finite Graph: a Combinatorial Approach
  Marcin Gasiorek

- **(15:40)** Points Compression and Probabilistic Coordinate Recovery for Edwards Curve over Finite Field
  Benjamin Justus

■ Break . . . . **(16:00)**

■ **Numerical Computing** . . . . **(16:20/18:20)**
> (chair: Vasile Berinde, room: A02)

- **(16:20)** On Coxeter type classification of loop-free edge-bipartite graphs and matrix morsifications
  Rafał Bocian, Mariusz Felisiak and Daniel Simson

- **(16:40)** Dependence of the Oscillatory Movements of an Unmanned Aerial Vehicle on the Forward Velocity
  Alexandra-Emilia Fortis, Stefan Balint and Teodor-Florin Fortis

- **(17:00)** Planar Stretching Flows with Partial Slip
  Remus-Daniel Ene, Vasile Marinca and Romeo Negrea

- **(17:20)** A Matlab Class for Double-Double Computation
  Dina Tsarapkina and David Jeffrey

- **(17:40)** An Efficient Computational Framework for Studying Dynamical Systems
  Islam Elshaarawy and Walid Gomaa

- **(18:00)** Fast Computing of Non-Uniform Sampling Positions for Real Signals
  Péter Kovács and Viktor Vad

■ Welcome Reception . . . . **(18:30)**

Tracks

Tuesday, 24th September

■ **Invited Talk** . . . . **(09:00/09:50)**
       (chair: Dana Petcu, room: A02)

  Autonomic and SLA aware Cloud management
  Ivona Brandic

■ Break . . . . **(09:50)**

■ **Advances in the Theory of Computing** . . . . **(10:10/12:10)**
       (chair: Gabriel Istrate, room: A02)

    (10:10) Online-scheduling on identical machines with bounded migration
          Thorsten Ehlers and Klaus Jansen

    (10:30) Algebraic Properties of Generalized Multisets
          Andrei Alexandru and Gabriel Ciobanu

    (10:50) Algorithmic experiences in Coxeter spectral study of P-critical edge-bipartite
               graphs and posets
          Agnieszka Polak and Daniel Simson

    (11:10) Bounded Bi-ideals and Linear Recurrence
          Inese Bērziņa, Jānis Buls and Raivis Bēts

    (11:30) Token-free bounded delay codes and hash iteration
          Sebastian-Codrin Ditu

    (11:50) A Systematic Approach to Computations on Decomposable Graphs
          Elena Ravve and Zeev Volkovich

■ Lunch . . . . **(12:10)**

■ **Invited Talk** . . . . **(13:30/14:20)**
       (chair: Nikolaj Bjorner, room: A02)

  Specify and verify your language using K
  Grigore Rosu

■ Break . . . . **(14:20)**

■ Artificial Intelligence . . . . (14:40/16:00)

(chair: Dan Simovici, room: A02)

(14:40) Local Rank Distance
Radu-Tudor Ionescu

(15:00) From Plagiarism to Malware Detection
Ciprian Oprisa, George Cabau and Adrian Colesa

(15:20) Clustering Data Streams Using Mass Estimation
Andrei-Sorin Sabau

(15:40) An automatic updating perceptron-based system for malware detection
Marius Barat, Dumitru-Bogdan Prelipcean and Dragos-Teodor Gavrilut

■ Break . . . . (16:00)

■ Artificial Intelligence . . . . (16:20/17:40)

(chair: Jose Torres-Jimenez, room: A02)

(16:20) Using Self-organizing Maps for fraud prediction at online auction sites
Vinicius Almendra and Denis Enachescu

(16:40) Reducing the number of useless revisions performed by constraint solvers
based on AC-3
Cristian Frasinaru and Florentin Olariu

(17:00) Should we beware the Exceptions? An empirical study on the Eclipse project
Cristina Marinescu

(17:20) Common Due-Date Problem: Exact Polynomial Algorithms for a Given Job
Sequence
Abhishek Awasthi, Jörg Lässig and Oliver Kramer

■ Break . . . . (17:40)

■ Distributed Computing . . . . (18:00/19:20)

(chair: Ivona Brandic, room: A02)

(18:00) Parallel Data Acquisition for Visualization of Very Large Sparse Matrices
Daniel Langr, Ivan Šimeček, Pavel Tvrdík and Tomáš Dytrych

(18:20) The study of impact of matrix-processor mapping on the parallel sparse
matrix-vector multiplication
Ivan Simecek, Daniel Langr and Erik Srnec

(18:40) Securing communication in a peer-to-peer messaging middleware
Péter Szilágyi

(19:00) A Parallel Framework for Video Super-resolution
Pedro-Garcia Freitas, Aletéia Araújo and Mylene Farias

Tracks

Wednesday, 25th September

■ **Invited Talk** . . . . **(09:00/09:50)**
   (chair: Daniela Zaharie, room: A02)

   Compression and data mining
   Dan Simovici

■ Break . . . . **(09:50)**

■ **Tutorial** . . . . **(10:10/12:10)**
   (chair: Tetsuo Ida, room: A02)

   `(10:10)` Origami design with Lang's Universal Molecule
   Ileana Streinu

■ Lunch . . . . **(12:10)**

■ **Invited Talk** . . . . **(13:30/14:20)**
   (chair: Grigore Rosu, room: A02)

   TiMo in Timisoara
   Gabriel Ciobanu

■ Break . . . . **(14:20)**

■ **Tutorial** . . . . **(14:40/16:00)**
   (chair: Ileana Streinu, room: A02)

   `(14:40)` An Introduction to Modern Symbolic-Numeric Computation
   Stephen Watt

■ Break . . . . **(16:00)**

■ **Distributed Computing** . . . . **(16:20/17:20)**
   (chair: Gabriel Ciobanu, room: A02)

   `(16:20)` Space Efficient Formats for Structure of Sparse Matrices Based on Tree
             Structures
   Ivan Simecek, Daniel Langr and Pavel Tvrdik

   `(16:40)` Algorithm for Cooperative CPU-GPU Computing
   Razvan-Mihai Aciu and Horia Ciocarlie

   `(17:00)` Cph CT Toolbox: CT Reconstruction for Education, Research and Industrial
             Applications
   Jonas Bardino, Martin Rehr and Brian Vinter

■ Trip and Conference Dinner . . . . **(18:00)**

Tracks

Thursday, 26th September

■ **Invited Talk** . . . . **(09:00/09:50)**
　　　　　(chair: Viorel Negru, room: A02)

　A Survey of Covering Arrays
　　Jose Torres-Jimenez

■ Break . . . . **(09:50)**

■ **Logic and Programming** . . . . **(10:10/12:10)**
　　　　　(chair: Tudor Jebelean, room: A02)

　(10:10) Fresh-Variable Automata. Application to Service Composition
　　　　Walid Belkhir, Yannick Chevalier and Michael Rusinowitch

　(10:30) A Collaborative Framework for Non-Linear Integer Arithmetic Reasoning in
　　　　　Alt-Ergo
　　　　Sylvain Conchon, Mohamed Iguernelala and Alain Mebsout

　(10:50) Bound Propagation for Arithmetic Reasoning in Vampire
　　　　Ioan Dragan, Konstantin Korovin, Laura Kovács and Andrei Voronkov

　(11:10) Engineering Hoare Logic-based Program Verification in K Framework
　　　　Andrei Arusoaie

　(11:30) An extension of the Interpreter pattern to define domain-parametric rewriting
　　　　　systems
　　　　Lorenzo Capra and Vincenzo Stile

　(11:50) Certified, Efficient and Sharp Univariate Taylor Models in COQ
　　　　Érik Martin-Dorel, Micaela Mayero, Ioana Pasca, Laurence Rideau and Laurent Théry

■ Lunch . . . . **(12:10)**

■ **Logic and Programming** . . . . **(13:10/13:50)**
　　　　　(chair: Laura Kovacs, room: A02)

　(13:10) Compiler design for hyper-metaprogramming
　　　　Lucian-Radu Teodorescu and Rodica Potolea

　(13:30) Verifying (in-)stability in floating-point programs by increasing precision, using
　　　　　SMT solvers
　　　　Gabriele Paganelli and Wolfgang Ahrendt

■ **Artificial Intelligence** .... **(13:50/15:30)**

       (chair: Daniela Zaharie, room: A02)

   (13:50) An Effective Ensemble-based Method for Creating On-the-Fly Surrogate Fitness Functions for Multi-Objective Evolutionary Algorithms

     Alexandru-Ciprian Zavoianu, Edwin Lughofer, Gerd Bramerdorfer, Wolfgang Amrhein and Erich-Peter Klement

   (14:10) Controlled Mutation Evolutionary Algorithm for Multi-objective Optimization

     Corina Rotar

   (14:30) Context Matching for Ambient Intelligence Applications

     Andrei Olaru

   (14:50) Traders' Behavior Effect on Stock Price Evolution

     Monica Tirea

   (15:10) Evolutionary approach to negotiation in game AI

     Iuhasz Gabriel, Victor-Ion Munteanu and Viorel Negru

■ **Closing** .... **(15:40/16:00)**

       (chair: Nikolaj Bjorner, room: A02)

Special Sessions, Workshops and Tutorials

Monday, 23rd September

■ **MICAS Workshop (1)** . . . . **(10:40/12:00)**
        (chair: Massimiliano Rak, room: 045C)

  (10:40) Supporting the Development and Operation of Multi-Cloud Applications: The
            MODAClouds Approach

       Elisabetta Di Nitto

  (11:00) Assessing SLA Compliance from Palladio Component Models
       Juan Perez and Giuliano Casale

  (11:20) From the Desktop to the Multi-clouds: The case of ModelioSaaS
       Marcos-Aurélio Almeida-DaSilva, Antonin Abhervé and Andrey Sadovykh

  (11:40) Distributed Resource Identification Service for Cloud Environments
       Silviu Panica and Dana Petcu

■ **IAFP Workshop (1)** . . . . **(10:40/12:00)**
        (chair: Stefan Maruster, room: 032)

  (10:40) Iterative algorithm for triangular operators
       Marcel Serban

  (11:00) The contraction mapping principle for nonself mappings on Banach spaces
            endowed with a graph

       Mihaela Petric and Vasile Berinde

  (11:20) Fixed point theorems for nonself single-valued cyclic contractions
       Marin Borcut, Madalina Pacurar and Vasile Berinde

  (11:40) Nonlinear contractions in fuzzy metric space
       Dorel Mihet and Claudia Zaharia

■ **MICAS Workshop (2)** . . . . **(14:20/16:00)**

(chair: Elisabetta Di Nitto, room: 045C)

(14:20) Quality Assurance for Open Source Software Configuration Management

Stefan Meyer, Philip Healy, Theo Lynn and John Morrison

(14:45) ARTIST Methodology and Framework: A novel approach for the migration of legacy software on the Cloud

Andreas Menychtas, Christina Santzaridou, George Kousiouris, Theodora Varvarigou, Leire Orue-Echevarria, Juncal Alonso, Jesus Gorronogoitia, Hugo Bruneliere, Oliver Strauss, Tatiana Senkova, Bram Pellens and Peter Stuer

(15:10) Developing Secure Cloud Applications: A Case Study

Ermanno Battista, Valentina Casola, Nicola Mazzocca, Ficco Massimo and Massimiliano Rak

(15:35) Non-Interleaving Operational Semantics for Geographically Replicated Databases

Gabriel Ciobanu and Ross Horne

■ **IAFP Workshop (2)** . . . . **(14:20/16:00)**

(chair: Ioan Rus, room: 032)

(14:20) On the convergence of Picard iteration for strong demicontractive mappings

Stefan Maruster

(14:40) The estimation of solution of Fredholm integral equation in three variables

Monica Lauran

(15:00) On some fixed point theorems for contractive mappings in metric spaces endowed with a graph

Florin Bojor

(15:20) Tripled fixed point theorems for Kannan type mixed monotone mappings

Vasile Berinde and Madalina Pacurar

(15:40) The mini software package FIXPOINT for approximating fixed points of real functions

Andrei Bozantan and Vasile Berinde

■ **MICAS Workshop (3)** . . . . **(16:20/18:00)**

(chair: Danilo Ardagna, room: 045C)

(16:20) Selecting Cloud Services for Legacy Applications. Success Criteria and Requirements for a Decision Support System

Alexander Gunka, Harald Kühn and Stepan Seycek

(16:40) A Hybrid IaaS – Paas Cloud Infrastructure Managed by an Autonomous Element

Alexandru Stanciu

(17:00) IBM Hyperscale Computing Solutions - NeXtSCALE

Florin Manaila

(17:30) SEED – A Cloud of Public Sector Information and Public Advertising

Daniel Pop

Special Sessions, Workshops and Tutorials

Tuesday, 24th September

■ **MICAS Workshop (4)** .... **(10:10/12:10)**
(chair: Andrey Sadovykh, room: 045C)

(10:10) MODAClouds
Danilo Ardagna

(10:40) Cloud4SOA
Roman-Sosa Gonzalez

(11:10) ARTIST
Leire Orue-Echevarria Arrieta

(11:40) mOSAIC & SPECS
Massimiliano Rak and Ciprian Craciun

■ **IAFP Workshop (3)** .... **(10:10/12:10)**
(chair: Vasile Berinde, room: 032)

(10:10) New existence theorems for abstract Hammerstein equations
Charles Chidume and M.S. Minjibir

(10:30) Dynamic of a continuously Frechet differentiable operator of which differential
at each point is weakly Picard operator

Ioan Rus

(10:50) Extended-precision computation in Matlab of Inverse Laplace Transforms
Zinovi Krougly, David Jeffrey and Dina Tsarapkina

(11:10) Controlling autonomous scalar discrete dynamical systems generated by
Lipschitz functions

Gabriella Kovacs

(11:30) Approximating fixed points of demicontractive mappings by iterative methods
defined as admissible perturbations of an operator

Cristina Ticala

(11:50) On the B-algorithm for accelerating fixed point iterative methods
Oana Bumbariu

(12:10) Stability of coupled and tripled fixed point iterative methods for monotone and
mixed monotone mappings

Ioana Timis

■ **MICAS Workshop (5)** .... **(14:40/16:00)**
(chair: Dana Petcu, room: 045C)

■ **IAFP Workshop (4)** . . . . **(14:40/16:00)**

(chair: Charles Chidume, room: 032)

(14:40) Fixed point theorems for non self single-valued contractive type mappings on Banach spaces endowed with a graph

Laszlo Balog and Vasile Berinde

(15:00) Fixed point theorema for nonself single-valued mappings satisfying the inwardness condition

Andrei Horvat-Marc and Vasile Berinde

(15:20) A comparative study upon the analysis of compartmental growth models

Lavinia-Cristina Moatar-Moleriu and Radu-Dumitru Moleriu

(15:40) Experiments and the recommendation for partitioning systems of equations

Liviu Scai

■ **ACSys Workshop** . . . . **(16:20/17:40)**

(chair: Viorel Negru and Victor Munteanu, room: 045C)

(16:20) Ontology-based Recommender for Distributed Machine Learning Environment

Daniel Pop and Caius Bogdanescu

(16:40) Managing Risk Behavior on an Evolutionary Market – A Risk Limits and Value-at-Risk Measures Approach

Monica Tirea and Viorel Negru

(17:00) A System for Automated Negotiation using Cognitive Agents with Distinct Strategies

Serban Radu and Adina Florea

(17:20) Join Patterns for Concurrent Agents

Alex Muscar

■ **NCA Workshop** . . . . **(18:00/19:40)**

(chair: Flavia Micota, room: 045C)

(18:00) Resolution of the Probabilistic Vector Machine Problem via a Single Linear Program

Mihai Cimpoesu, Andrei Sucila and Henri Luchian

(18:20) Detecting loss of diversity for an efficient termination of EAs

David Roche, Debora Gil and Jesús Giraldo

(18:40) P System Testing with Parallel Simulators-a Survey

Alex Ciobanu and Florentin Ipate

(19:00) A Simple Shifting Method for Community Detection in Social Networks

Rodica-Ioana Lung and Camelia Chira

Special Sessions, Workshops and Tutorials

Wednesday, 25th September

■ **HPCSP Workshop (1)** . . . . **(10:10/12:10)**
  (chair: Ralf-Peter Mundani, room: 045C)

  (10:10) HPC tutorial
  Adrian Jackson

■ **HPCSP Workshop (2)** . . . . **(14:40/16:00)**
  (chair: Nicolla Spallanzani, room: 045C)

  (14:40) Adaptive Distributed Data Structure Management for Parallel CFD
            Applications
  Jérôme Frisch, Ralf-Peter Mundani and Ernst Rank

  (15:00) MDMP: Managed Data Message Passing
  Adrian Jackson and Par Strand

  (15:20) N-Body Simulations With GADGET-2
  Victor-Lucian Spiridon and Emil-Ioan Slusanschi

  (15:40) MPI-based Asynchronous Simulation of Spiking Neural Networks on the Grid
  Marius Joldos, Octavian Vinteler, Ioan-Radu Peter and Ioan Lucian-Muntean

■ **HPCSP Workshop (3)** . . . . **(10:10/12:10)**
  (chair: Emil Slusanschi, room: 045C)

  (10:10) A New Digital Repository for Remotely Sensed Hyperspectral Imagery on
            GPUs
  Jorge Sevilla and Antonio Plaza

  (10:40) Evaluating moldability of LHCb jobs for multicore job submission
  Nathalie Rauschmayr and Achim Streit

  (11:10) Optimised hybrid parallelisation of a CFD code on Many Core architectures
  Adrian Jackson and Sergio Campobasso

  (11:40) Optimization and parallelization of Emedge3D on shared memory architecture
  Matthieu Kuhn, Guillaume Latu, Stéphane Genaud and Nicolas Crouseilles

■ **HPCSP Workshop (4)** . . . . **(13:10/15:30)**

(chair: Dana Petcu, room: 045C)

(13:10) Parallel averages for noisy Monte Carlo sampling in semiclassical time correlation functions

Nicolla Spallanzani

(13:40) A Parallel Implementation of a Region Growing Segmentation Algorithm for Multispectral and Hyperspectral Images

Luis-Ignacio Jimenez, P.N. Happ, R.Q. Feitosa and A. Plaza

(14:10) Parallel Poisson Surface Reconstruction in the GPU

Alexander Agathos

(14:40) Parallelization strategies for high performance three dimensional electromagnetic scattering codes

Claudiu Biris

(15:10) HOST project and H2020 collaboration perspectives

Dana Petcu

Live status on the web and mobile

The following QRCode contains the URL `http://m.synasc.ro/` for our web application with live status about the current and upcoming presentations and other events.

Internet access

Wireless access

Wireless access is available inside the premises of the university, by choosing the network named `SYNASC-WiFi`. The wireless network is encrypted using WPA/WPA2. The access passphrase is `nifojuvaleda` (that is `nifo juva leda` without spaces).

Security information

Unsecured SMTP (port 25) is disabled. Instead SMTP over SSL (port 465) can be used. POP3, IMAP for email retrieval can be used. And of course HTTP/HTTPS, FTP and SSH are available.

For more informations and questions please contact the support staff.

City of Timişoara

Highlights

The first record of the city of Timisoara, built on the site of an ancient Roman fortress called Castrum Regium Themes, dates back to 1212. Over the years, Timisoara, the largest city in western Romania, has been influenced by many cultures. The Romans used it as an important crossroads fortress until the Tatars destroyed it in the 13th century. Conquered by Turkish armies in 1552, Timisoara remained under their protection until 1718 when the region of Banat came under Austrian rule for two centuries. Timisoara later became a vital medieval commercial and manufacturing town. Turks, Austrians, Germans and Serbs all left their mark and their influence can be seen in neighborhoods throughout the city even today.

The charm of this city, settled on the northern bank of the Bega River, lies in its distinct architectural character and vibrant cultural life. Frequently referred to as "Little Vienna", Timisoara is home to year-round musical and theatrical performances, art galleries, museums and a buzzing nightlife. A progressive, cosmopolitan place, Timisoara was the first city in Europe and second in the world after New York, to use electricity to illuminate its public streets.

Thanks to a Mediterranean climate, life is best observed outdoors, in the many public squares and lush green retreats. Timisoara is easy to explore on foot. If you get tired, a tram will be along in a moment; the system is fast, frequent and efficient.

Timisoara abounds with churches of several denominations, a Jewish quarter, an elegant baroque square and a pedestrian-only downtown area. Some of the monuments in the heart of the city afford panoramic views, while the many parks in this "city of flowers" provide an idyllic spot to take a break from sightseeing.

Interesting facts: Timisoara was the first European city to introduce horse-drawn trams (in 1869) and electrical street lighting (in 1889); Timisoara was built on a swamp; the Metropolitan Cathedral has 5000 oaks supports underneath it; Johnny Weissmuller, Hollywood's original Tarzan, was born here.

(Information from `http://www.romaniatourism.com/timisoara.html`)
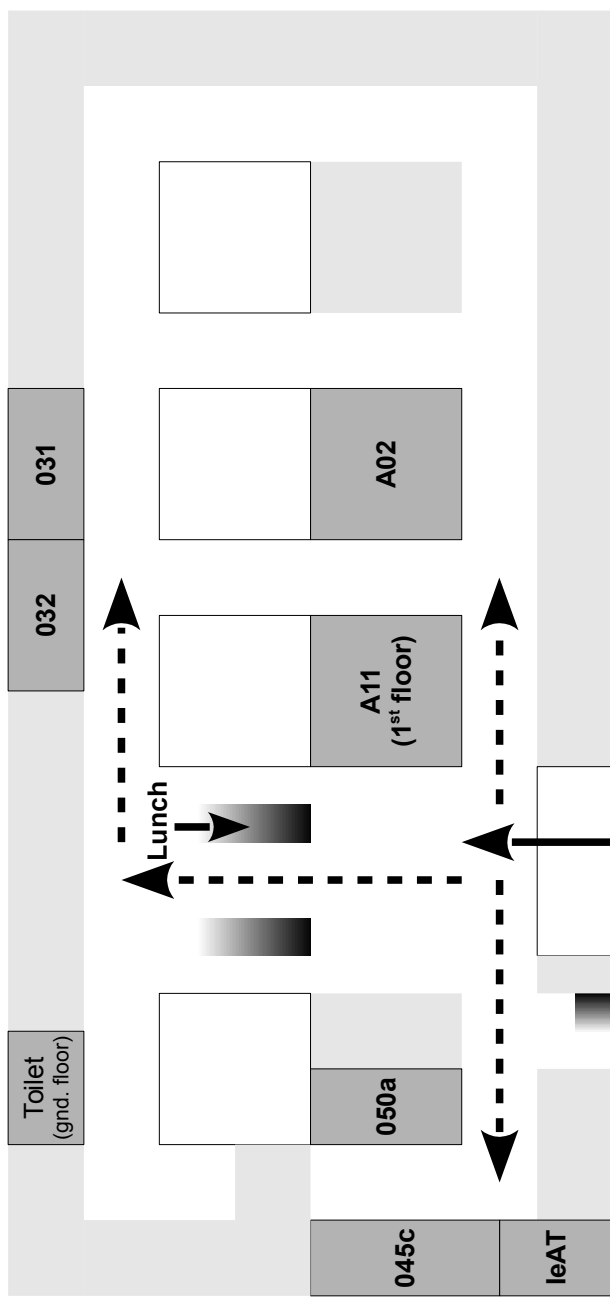
Public transportation

Several bus ("autobuz"), tram ("tramvai") and trolleybus ("troilebuz") routes connect Timisoara's main areas and tourist attractions. The public transportation system runs between 4:45am and 11:15pm. Paper tickets must be purchased before boarding at kiosks near the station, and validated once boarded at the ticket-stamping machine in front of the vehicle. Tickets are interchangeable for all three forms of transport with the exception of express buses.

Taxi companies: City Taxi (+40 256) 949; Grup Taxi (+40 256) 946; Radio Taxi (+40 256) 940; Tudo Taxi (+40 256) 945;

Useful phone numbers

Organizers: Viorel Negru (+40) 755240164; Daniela Zaharie (+40) 729639576; Isabela Drămnesc - (+40) 0767505308.

Emergencies (police, hospital, fire station): 112.

**West University
of Timisoara**

Campus ← Bvd. Vasile Parvan → City Center

Toilet
(gnd. floor)

031

032

A11
(1st floor)

A02

Lunch

Entrance

050a

045c

IeAT

■ **A02** – ground floor:
  ▪ opening
  ▪ invited talks
  ▪ tracks / workshops
■ **IeAT** – ground floor:
  ▪ office
■ **A11** – 1st floor:
  ▪ backup

■ **045c** – ground floor:
  ▪ registration
  ▪ workshops
■ **031**, **032** – ground floor:
  ▪ workshops
  ▪ project meetings
■ **050a** – ground floor:
  ▪ coffee break
  ▪ internet

Notes

Notes