

Contents

1	Welcome to ITiCSE 2005	4
2	Conference Committee	5
3	Local Organization	5
4	Conference Campus	6
4.1	Accessing the Campus and Conference Buses	6
4.2	Conference Buildings	6
4.3	Computer Access	6
4.4	Coffee Breaks and Lunches	7
4.5	Tutorials	7
4.6	Other Useful Information	7
5	Conference Programme	8
5.1	Overview Monday-Wednesday	8
5.2	Opening Session	9
5.3	Keynote Speakers	9
5.4	Paper Sessions	9
5.5	Panels	16
5.6	Demonstrations	16
5.7	Posters	17
5.8	Student Posters	19
5.9	Tips & Techniques	21
5.10	Working Groups	21
5.11	Birds-of-a-Feather Session	22
5.12	Closing Session	22
6	Social Events	23
6.1	Reception on Sunday	23
6.2	Excursions and Conference Banquet on Tuesday afternoon	23
6.3	Closing Session	23
7	Conference Sponsors	24
8	Annexes	25
8.1	Tagus River and the South Margin	25
8.2	FCT/UNL Campus	25
8.3	Conference Building (Ed. VII)	26

1 Welcome to ITiCSE 2005

We are pleased to welcome you to Innovation and Technology in Computer Science Education — ITiCSE 2005. We are honored to host this event, in particular as 2005 marks the tenth anniversary ITiCSE conference, a significant milestone in the evolution of this series. The growth and increasing prestige of ITiCSE is testimony to the soundness of the vision — to promote the exchange of international perspectives and advances on questions in computer science education — that motivated the inception of ITiCSE conferences. ITiCSE 2005 will be held in the campus of the Faculty of Science and Technology of Universidade Nova de Lisboa, and is organized locally by the Computer Science Department. It is a fortunate coincidence that this year we are also celebrating the 30th anniversary of the Computer Science Department, and its pioneer role in the launching of the first Computer Science degree in Portugal, back in 1975.

The conference programme is full of exciting events concerning our common interests in computer science, and including several social events and excursions that we hope will reveal aspects of the life and the history of Portugal and the region of Lisbon, and the typical Portuguese hospitality. The technical programme includes three keynote speeches, tutorials, working groups, posters, student posters, “tips & techniques”, panels, paper presentations, and exhibits.

We are honored to have as invited lecturers Professors Maria Klawe, Joseph Weizenbaum, and Emílio Luque who have kindly accepted to share their deep insights, knowledge and experience with all of us. We are proud that for the first time, student poster presentations are included in ITiCSE, an opportunity to have undergraduate and graduate students participate in the conference by presenting work that represents the fruit of excellent practice in computer science education. The students also represent the future generations of computer scientists and citizens who will project the vision of ITiCSE forward into what will certainly be an exciting and challenging second decade. We believe this an appropriate way to celebrate this notable anniversary of the ITiCSE conference series.

ITiCSE 2005 has attracted a record number of paper submissions, making the selection quite competitive, and allowing the acceptance of an increased number of high-quality papers, representing a diversity of countries. Sixty-eight papers are included in the programme, organized in three parallel tracks, addressing important themes in computer science education.

The organization of a conference of this size represents a huge and collective effort involving many people: The Conference and Local Committees; reviewers; financial supporters; exhibitors; staff of the ACM and SIGCSE boards; members of the Faculty of Science and Technology of Universidade Nova de Lisboa, in particular, the Rector of the University, and the Dean of the Faculty; and the staff of the Computer Science Department and the CITI research centre. We also gratefully acknowledge the support from Microsoft Portugal and the Luso-American Foundation.

Welcome to ITiCSE 2005!

2 Conference Committee

Conference co-chairs:	José C. Cunha (<i>Univ. Nova de Lisboa, Portugal</i>) William Fleischman (<i>Villanova Univ., PA, USA</i>)
Program co-chairs:	Viera K. Proulx (<i>Northeastern Univ., MA, USA</i>) João Lourenço (<i>Univ. Nova de Lisboa, Portugal</i>)
Treasurer and registrar:	Frank Young (<i>Rose-Hulman Institute of Technology, IN, USA</i>)
Future conference liaison:	Renzo Davoli (<i>Univ. Bologna, Italy</i>)
Working groups coordinator:	Janet Carter (<i>Univ. of Kent, UK</i>)
Poster / demo co-coordinators:	Pedro Medeiros (<i>Univ. Nova de Lisboa, Portugal</i>) Stanislaw Szejko (<i>Gdansk Univ. of Technology, Poland</i>)
Student poster coordinator:	Mark Ratcliffe (<i>Univ. of Wales, UK</i>)
Tips and techniques:	Bruce Klein (<i>Grand Valley State Univ., MI, USA</i>)
Tutorials co-coordinators:	Paola Salomoni (<i>Univ. Bologna, Italy</i>) Henry Walker (<i>Grinnel College, Iowa, USA</i>)
Utility Infielder:	Daniel Joyce (<i>Villanova Univ., PA, USA</i>)

3 Local Organization

Conference co-chair:	José C. Cunha
Program co-chair:	João Lourenço
Webmaster and System Management:	Jorge Custódio
Technical support:	Pedro Medeiros Vítor Duarte Miguel Maurício
Social events:	Carmen Morgado
Exhibits:	Paulo Lopes
Art & Design:	Luís Soares
Secretariat:	Filipa Reis
Student Volunteers:	César Feliciano, Duarte Alvim, Joana Lopes Nuno Martins, Ricardo Silva, Vitor Carvalho

Members of the local organization (including student volunteers) have a badge with a light blue color. Please look for one if you need some help or advice.

4 Conference Campus

4.1 Accessing the Campus and Conference Buses

The Conference will take place at the Faculty of Science and Technology Campus in Monte de Caparica (<http://www.fct.unl.pt>) on the south bank of the Tagus River (Rio Tejo). The campus is well located, near Lisbon (about 12 km from the city center) and near the seashore (about 4 km from the Atlantic Ocean). It is easily accessible from Lisbon by car, public bus or train, crossing the “Ponte 25 de Abril” (Abril 25th Bridge), or by ferryboats (maps may be found on the last pages of this booklet).

Most conference delegates will be staying in the Hotel Costa da Caparica, Av. General Humberto Delgado, 47, 28029-506 CAPARICA, Phone: (+351) 212 918 900.

There will be conference buses each day, linking the hotel to the conference site in the morning and returning to the hotel in the evening.

Each day from Monday to Wednesday, there will be buses to pick up participants at the Hotel Costa da Caparica, starting at 8:30. The buses will loop several times between the hotel and the conference site until 9:15 (the last bus will depart from Hotel Costa da Caparica at 9:15). Please make your plans in order to be near the hotel entrance gate by that time. Delegates staying in other hotels wishing to take the conference bus must find their own way to Hotel Costa da Caparica.

Conference buses will take participants back to the hotel at the conclusion of the formal sessions on Monday and Wednesday, at about 17:30. The last bus will leave the campus at 18:15.

After lunch on Tuesday, at 13:50, all conference participants should return to Hotel Costa da Caparica using the conference buses. These same buses will take excursion participants to Sintra and Parque das Nações. All excursion participants should board these buses at Hotel Costa da Caparica at 14:00.

4.2 Conference Buildings

All the Conference sessions will be held in Building VII (E VII in the map in annex). The rooms for each session are marked on the conference program.

Check-in, on-site registration and information requests will be handled at the conference desk. Exhibits, demonstrations, posters and student poster displays, will all take place in the conference building hall.

4.3 Computer Access

Four laboratories in the conference building, rooms 2.2, 2.3, 3.2 and 3.3 (follow the signs in the conference building) have been reserved for use by the conference delegates. In these laboratories there will be around 40 Windows XP machines. These machines will be equipped with standard software like Web browsers and SSH clients.

If you bring a wireless-enabled laptop it will be possible to access the Internet through the Campus wireless network. This network will be available everywhere in the conference building and in most parts of the campus. Please note that the campus wireless network is in early stage of deployment and the guarantees of privacy are weak. Your laptop should be running a personal firewall and an updated antivirus package.

To have access to the Campus wireless network just choose the "guest-e-U" SSID and everything should work well (don't forget that the IP address must be obtained automatically through DHCP).

When connecting your laptop to a (wired) network socket, just configure the connection to obtain the IP address and other information through DHCP.

Please don't forget that you are connecting your machine to a public network, sharing it with lots of students...

4.4 Coffee Breaks and Lunches

Coffee breaks will be served each day in middle of the morning, and on Monday and Wednesday afternoons, in the wing to the right of the conference building entrance hall.

Lunches will be served in the "Cantina" Building, just across the street and a few steps to the right from the main entrance of the conference building (see the map in the back of the booklet).

4.5 Tutorials

There will be one full-day and three half-day tutorials running on Sunday, from 9:30 to 17:00.

T-01 Constructing Database Applications for PDA using the .Net Framework, *Mario Guimaraes*

T-02 Teaching an Introductory Course in Data Mining, *Richard J. Roiger*

T-03 Test-Driven Development, *Joseph Bergin, Eugene Wallingford*

T-04 LEGO Robots and AI, *Amruth Kumar*

4.6 Other Useful Information

For emergencies during the conference, please contact the Conference Desk. The Secretariat of Departamento de Informática can also help, from 9:00 to 12:30 and from 14:00 to 17:00 each day. The secretariat can be reached at the number 212 948 536.

In case of *emergency, out of conference hours*, call the local organization staff at the number 961 427 631.

Hopefully this will not be needed, but in case of an emergency, the closest hospital is the Hospital Garcia da Horta, just a few minutes drive from the Conference site. To call for an ambulance in an emergency situation, dial the number **112** (European Emergency Number) and provide your location.

You can call a Taxi from the Hotel Costa da Caparica, or ask at the Conference Desk.

Other useful phone numbers to call a Radio Taxi:

In Costa da Caparica/Almada: 212 947 070 / 212 509 660

In Lisbon: 218 111 100 / 218 119 000

5 Conference Programme

5.1 Overview Monday-Wednesday

	Monday	Tuesday	Wednesday	
9:30	Opening Session Joseph Weizenbaum	Emilio Luque	Maria Klawe	9:30
9:40				
9:50				
10:00				
10:10				
10:20				
10:30				
10:40				
10:50				
11:00				
11:10	Coffee Break	Poster 1	Demo 1	11:00
11:10	Paper 1	Paper 2	WG 1	11:10
11:20			WG 2	11:20
11:30			WG 3	11:30
11:40				11:40
11:50	Lunch			11:50
12:00	Lunch			12:00
12:10	Lunch			12:10
12:20	Lunch			12:20
12:30	Lunch			12:30
12:40	Lunch			12:40
12:50	Lunch			12:50
13:00	Lunch			13:00
13:10	Lunch			13:10
13:20	Lunch			13:20
13:30	Lunch			13:30
13:40	Lunch			13:40
13:50	Lunch			13:50
14:00	Student Poster Plenary Session			14:00
14:10	Paper 3	Paper 4	WG 4	14:10
14:20			WG 5	14:20
14:30	Student Poster Plenary Session			14:30
14:40	Paper 3	Paper 4	WG 4	14:40
14:50			WG 5	14:50
15:00	Student Poster Plenary Session			15:00
15:10	Student Poster Plenary Session			15:10
15:20	Coffee Break	Poster 2	Demo 2	15:20
15:30	Student Poster Plenary Session			15:30
15:40	Student Poster Plenary Session			15:40
15:50	Student Poster Plenary Session			15:50
16:00	Paper 5	Paper 6	Tips and Techniques	16:00
16:10				16:10
16:20	Student Poster Plenary Session			16:20
16:30	Student Poster Plenary Session			16:30
16:40	Student Poster Plenary Session			16:40
16:50	Student Poster Plenary Session			16:50
17:00	Student Poster Plenary Session			17:00
17:10	Student Poster Plenary Session			17:10
17:20	Student Poster Plenary Session			17:20
17:30	Student Poster Plenary Session			17:30
17:40	Student Poster Plenary Session			17:40
17:50	Student Poster Plenary Session			17:50
18:00	Student Poster Plenary Session			18:00
18:10	Student Poster Plenary Session			18:10
18:20	Student Poster Plenary Session			18:20
18:30	Student Poster Plenary Session			18:30
18:40	Student Poster Plenary Session			18:40
18:50	Student Poster Plenary Session			18:50
19:00	Student Poster Plenary Session			19:00
19:10	Student Poster Plenary Session			19:10
19:20	Student Poster Plenary Session			19:20
19:30	Student Poster Plenary Session			19:30
19:40	Student Poster Plenary Session			19:40
19:50	Student Poster Plenary Session			19:50

5.2 Opening Session

The *Opening Session* will include very brief messages of welcome from the Conference Co-Chairs, José C. Cunha and William Fleischman, the Dean of Faculty, Nunes dos Santos, and the Rector of the University, Leopoldo Guimarães.

5.3 Keynote Speakers

Monday, 9:50 am – 10:50 am	Room: 1D	<i>Keynote Speaker</i>
Joseph Weizenbaum		<i>Information in the Information Society</i>
Tuesday, 9:30 am – 10:30 am	Room: 1D	<i>Keynote Speaker</i>
Emilio Luque		<i>Is Evolution or Revolution the Way for Improving the Teaching Methodology in Computer Science?</i>
Wednesday, 9:30 am – 10:30 am	Room: 1D	<i>Keynote Speaker</i>
Maria Klawe		<i>Changing the Image of Computer Science</i>

5.4 Paper Sessions

Monday, 11:20 am – 12:40 pm	Room: 1A	<i>Paper-1</i> Early Programming
Chair: <i>Mary Granger</i> , George Washington University, USA		
Testing First: Emphasizing Testing in Early Programming Courses		<i>Will Marrero, Amber Settle</i>
Learning to Program Through the Web		<i>Nghi Truong, Paul Roe, Peter Bancroft</i>
A Study of the Difficulties of Novice Programmers		<i>Essi Lahtinen, Kirsti Ala-Mutka, Hannu-Matti Jarvinen</i>
Teaching Programming and Language Concepts Using LEGOs		<i>Cynthia Hood, Dennis Hood</i>

Monday, 11:20 am – 12:40 pm	Room: 1B	Paper-2
Software Design and Communications		
Chair: <i>Leslie Schwartzman</i> , Roosevelt University, USA		
Student Interviews as a Tool for Assessment and Learning in a Systems Analysis and Design Course	<i>Martin Dick</i>	
A Research-Led Curriculum in Multimedia: Learning about Convergence	<i>Hugh Davis, Su White</i>	
The (Relative) Importance of Software Design Criteria	<i>Robert McCartney, Tzu-Yi Chen, Stephen Cooper, Leslie Schwartzman</i>	
A Pragmatic HCI approach: Engagement by Reinforcing Perception with Functional Design and Programming	<i>David Cox</i>	
Monday, 2:40 pm – 3:20 pm	Room: 1A	Paper-3
Distributed Computing and Operating Systems		
Chair: <i>Vitor A. Duarte</i> , Universidade Nova de Lisboa, Portugal		
DisASTer (Distributed Algorithms Simulation Terrain): A Platform for the Implementation of Distributed Algorithms	<i>Rainer Oechsle, Tim Gottwald</i>	
The Kaya OS Project and the uMPS Hardware Simulator	<i>Michael Goldweber, Renzo Davoli, Mauro Morsiani</i>	
Monday, 2:40 pm – 3:20 pm	Room: 1B	Paper-4
Visualization of Software Behavior		
Chair: <i>Guido Roessling</i> , University of Siegen, Germany		
Software Behaviour Understanding Supported by Dynamic Visualization and Role-Play	<i>Guillermo Jimenez-Diaz, Mercedes Gomez-Albarran, Marco A. Gomez-Martin, Pedro Gonzalez-Calero</i>	
Game Programming in Introductory Courses With Direct State Manipulation	<i>Michael Kolling, Poul Henriksen</i>	

Monday, 3:50 pm – 5:10 pm	Room: 1A	Paper-5 Understanding Algorithms
Chair: <i>Artur Miguel Dias</i> , Universidade Nova de Lisboa, Portugal		
Exploring Students' Understanding of the Concept of Algorithm: Levels of Abstraction	<i>Jacob Perrenet, Jan Friso Groote, Eric Kaasenbrood</i>	
Peer Assessment in the Algorithms Course	<i>Donald Chinn</i>	
Is it Really an Algorithm? - The Need for Explicit Discourse	<i>Bruria Haberman, Haim Averbuch, David Ginat</i>	
Providing Students Universal Access to a Centralized, Graphical Computing Environment	<i>David Letscher, Michael Goldwasser</i>	
Monday, 3:50 pm – 5:10 pm	Room: 1B	Paper-6 Novice Programmers
Chair: <i>Pedro Guerreiro</i> , Universidade Nova de Lisboa, Portugal		
An Analysis of Pattern of Debugging Among Novice Computer Science Students	<i>Marzieh Ahmadzadeh, Dave Elliman, Colin Higgins</i>	
Novice Java Programmers' Conceptions of Object and Class, and Variation Theory	<i>Anna Eckerdal, Michael Thuné</i>	
Implications of Perspective in Teaching Objects First and Object Design	<i>Henrik B Christensen</i>	
From Objects-First to Design-First with Multimedia and Intelligent Tutoring	<i>Sally Moritz, Fang Wei, Shahida Parvez, Glenn Blank</i>	
Tuesday, 11:00 am – 12:20 pm	Room: 1A	Paper-7 Iconic Programming
Chair: <i>Henry Walker</i> , Grinnell College, USA		
Iconic Programming for Flowcharts, Java, Turing, etc	<i>Stephen Chen, Stephen Morris</i>	
The Effect of Integrating an Iconic Programming Notation into CS1	<i>Charmain Cilliers, Andre Calitz, Jean Greyling</i>	
WIPE: A Programming Environment for Novices	<i>Georgios Evangelidis, Vassilios Efopoulos, Vassilios Dagdilelis, Maya Satratzemi</i>	
ETV: a Program Trace Player for Students	<i>Minoru Terada</i>	

Tuesday, 11:00 am – 12:20 pm	Room: 1B	<i>Paper-8</i>
Software Engineering Design		

Chair: *Leslie Schwartzman*, Roosevelt University, USA

Teaching Software Engineering Through Game Design	<i>Claypool Kajal, Kajal Claypool, Mark Claypool</i>
Active-Learning Activities that Introduce Students to Software Engineering Fundamentals	<i>Stephanie Ludi</i>
Teaching Software Development Skills Early in the Curriculum Through Software Engineering	<i>Chun Wai Liew</i>
Fun and Games: A New Course in Software Engineering	<i>Elizabeth Sweedyk</i>

Tuesday, 11:00 am – 12:20 pm	Room: 2A	<i>Paper-9</i>
Assessment		

Chair: *Carol S. O Shea*, Institute of Technology, Ireland

Assessing Students' Knowledge: Oral Exams vs. Written Tests	<i>Hasmik Gharibyan</i>
"Do Computer Science Students Know What They Know: A Calibration Study of Data Structure Knowledge	<i>Laurie Murphy, Josh Tenenberg</i>
A New Quantitative Assessment Tool for Computer Science Programs	<i>Timothy Fossum, Susan Haller</i>
Experiments in the Automatic Marking of ER-Diagrams	<i>Pete Thomas, Kevin Waugh, Neil Smith</i>

Tuesday, 11:00 am – 12:20 pm	Room: 2B	<i>Paper-10</i>
Databases and Artificial Intelligence		

Chair: *Nuno M. Marques*, Universidade Nova de Lisboa, Portugal

Teaching Transaction Management with SQL Examples	<i>Alan Fekete</i>
Teaching Data Modeling: Process and Patterns	<i>Paul Wagner</i>
Infusing Critical Thinking Skills into Content of AI Course	<i>M.R.K. Krishna Rao</i>
Designing CIspace: Pedagogy and Usability in a Learning Environment for AI	<i>Saleema Amershi, Alan Mackworth, David Poole, Cristina Conati, Giuseppe Carenini, Heather Maclaren</i>

Wednesday, 11:00 am – 12:20 pm	Room: 1A	<i>Paper-11</i> CS 1-2
---------------------------------------	----------	---

Chair: *Mary Granger*, George Washington University, USA

Analyzing Relationships between Closed Labs and Course Activities in CS1	<i>Ashok Samal, Leen-Kiat Soh, Suzette Person, Gwen Nugent, Jeff Lang</i>
The Linguistics of Object-Oriented Design: Implications for Teaching	<i>Christian Holmboe</i>
Using Simulation and Collaboration in CS1 and CS2	<i>António Mendes, Anabela Gomes, Micaela Esteves, Maria José Marcelino, Crescencio Bravo, Miguel Redondo</i>
Using Octave to Introduce Programming to Technical Science Students	<i>Nuno Marques, Francisco Azevedo, Carmen Morgado, Jorge Custódio</i>

Wednesday, 11:00 am – 12:20 pm	Room: 1B	<i>Paper-12</i>
Operating Systems, Architectures, and Networks		

Chair: *Pedro D. Medeiros*, Universidade Nova de Lisboa, Portugal

New Challenges in Computer Science Education	<i>João Cardoso</i>
Teaching Networking Hardware	<i>Martin Casado, Gregory Watson, Nick McKeown</i>
Using a Windows Attack intRusion Emulator to Teach Computer Security Awareness	<i>Donald Tobin, Michael Ware</i>
A Constructivist Framework for Operating Systems Education: a Pedagogic Proposal Using the SOsim	<i>Luiz Paulo Maia, Francis Machado, Ageu Pacheco</i>

Wednesday, 11:00 am – 12:20 pm	Room: 2A	<i>Paper-13</i>
E-Voting, Ethics, and Infrastructure for Computing Education		

Chair: *Frank Young*, Rose-Hulman Institute of Technology, USA

The Pedagogic Opportunities of Touch-Screen Voting	<i>Mark Jones</i>
E-Voting and Computer Science	<i>Ralph Morelli, Chris Armen</i>
Teaching Ethics in a Virtual Classroom	<i>Annegret Goold, Jo Coldwell</i>
e-Fuzion: The Development of a Pervasive Educational System	<i>Chad Peiper, David Warden, Ellick Chan, Boris Capitanu, Sam Kamin</i>

Wednesday, 11:00 am – 12:20 pm	Room: 2B	<i>Paper-14</i>
Exploring Student Learning		

Chair: *Jasir Alherbish*, Buraydah College of Technology, Saudi Arabia

Learning Styles Across the Curriculum	<i>A.T. Chamillard, Ricky Sward</i>
You Can Lead a Horse to Water: How Students Really Use Pedagogical Software	<i>Linda Stern, Selby Markham, Ria Hanewald</i>
Engaging Students to Work with Self-assessment Questions: A Study of Two Approaches	<i>Peter Brusilovsky, Sergey Sosnovsky</i>
Implementation of Computing Curricula 2001 Outside North America: a Case Study	<i>M.R.K. Krishna Rao, S. Junaidu, T. Maghrabi, M. Shafique, M. Ahmed, K. Faisal</i>

Wednesday, 2:00 pm – 3:00 pm	Room: 1A	<i>Paper-15</i>
Programming Languages		

Chair: *João Paulo Barros*, Instituto Politécnico de Beja, Portugal

Classes as First-Class Objects in an Environment-Passing Interpreter	<i>Timothy Fossum</i>
Cooking a Tiger a la Kremlinoise — Making Compiler Construction Projects Relevant to Core Curriculums	<i>Akim Demaille</i>
The Programming Languages Course for Freshmen: Choices and Experience	<i>J. Angel Velazquez-Iturbide</i>

Wednesday, 2:00 pm – 3:00 pm	Room: 1B	<i>Paper-16</i>
Assessing Student Learning		

Chair: *Alberto J. Proença*, Universidade do Minho, Portugal

When do Group Projects Widen the Experience Gap	<i>Lecia Barker, Kathy Garvin-Doxas</i>
Student-Built Algorithm Visualizations for Assessment: Flexible Generation, Feedback and Grading	<i>Tobias Lauer, Markus Krebs, Thomas Ottmann, Stephan Trahasch</i>
Student Communication Challenges in Distributed Collaborative Environments	<i>Denise Woit, Kathleen Bell</i>

Wednesday, 3:00 pm – 3:40 pm	Room: 1A	Paper-17
Group and Team Management		
Chair: <i>Henrique J. Domingos</i> , Universidade Nova de Lisboa, Portugal		
Team Formation Methods for Increasing Interaction During In-Class Group Work	<i>Katherine Deibel</i>	
Investigating Pair-Programming in a 2nd-year Software Development and Design Computer Science Course	<i>Emilia Mendes, Lubna Basil Al-Fakhri, Andrew Luxton-Reilly</i>	
Wednesday, 3:00 pm – 3:40 pm	Room: 1B	Paper-18
Networks		
Chair: <i>Vitor A. Duarte</i> , Universidade Nova de Lisboa, Portugal		
Virtual Square in Computer Science Education	<i>Renzo Davoli, Michael Goldweber</i>	
NetPrIDE: An Integrated Environment for Developing and Visualizing Computer Network Protocols	<i>Pierluigi Crescenzi, Gaia Innocenti, Giorgio Gambosi</i>	
Wednesday, 4:10 pm – 5:10 pm	Room: 1A	Paper-19
Pair Programming		
Chair: <i>Guido Roessling</i> , University of Siegen, Germany		
Extreme Programming Promotes Extreme Learning	<i>Chris Loftus</i>	
Student Performance in CS1 with Distributed Pair Programming	<i>Brian Hanks</i>	
Teaching Programming Collaboratively	<i>Robert Lockhart, Raymond Flood</i>	
Wednesday, 4:10 pm – 5:10 pm	Room: 1B	Paper-20
Formal Methods		
Chair: <i>Dan Joyce</i> , Villanova University, USA		
A Visual and Interactive Automata Theory Course Emphasizing Breadth of Automata	<i>Rakesh Verma</i>	
A Prolog Toolkit for Formal Languages and Automata	<i>Michel Wermelinger, Artur Miguel Dias</i>	
Interactive Manipulation of Regular Objects with FAdo	<i>Nelma Moreira, Rogerio Reis</i>	

5.5 Panels

Wednesday, 2:00 pm – 3:00 pm	Room: 2A	Panel-1
Virtual Student Teams: Opportunities and Challenges	<i>Annegret Goold (moderator)</i> , Deakin University <i>Mary Last</i> , University of Mary Hardin-Baylor <i>Chris Beaumont</i> , Liverpool Hope University College <i>Swee Cheng Chew</i> , Temasek Polytechnic <i>Arnold Pears</i> , Uppsala University	
Wednesday, 3:00 pm – 4:00 pm	Room: 2B	Panel-2
Difficulties Teaching Java in CS1 and How We Aim to Solve Them	<i>George R S Weir (moderator)</i> , University of Strathclyde <i>Antonio Mendes</i> , University of Coimbra <i>Marie Nordstrom</i> , Umea University <i>Tamar Vilner</i> , The Open University of Israel	
Wednesday, 4:10 pm – 5:10 pm	Room: 2A	Panel-3
Teaching Polymorphism Early	<i>Joseph Bergin (moderator)</i> , Pace University <i>Michael Caspersen</i> , Aarhus University <i>Eugene Wallingford</i> , University of Northern Iowa <i>Michael Kolling</i> , University of Southern Denmark <i>Michael Goldweber</i> , Xavier University	

5.6 Demonstrations

Monday, 10:50 am – 11:20 am	Room: Hall	Demo-1
The Environment for Learning to Program	<i>Nghi Truong</i>	
Monday, 3:20 pm – 3:50 pm	Room: Hall	Demo-2
The hands-on activities of the programming microworld objectKarel	<i>Xinogalos Stelios</i> , <i>Satratzemi Maya</i>	
SOTA - a Visualization Tool for the Symbol Table in a Compiler Course	<i>Micael Gallego-Carrillo</i> , <i>Francisco Gortazar-Bellas</i> , <i>Jaime Urquiza-Fuentes</i> and <i>J. Angel Velazquez-Iturbide</i>	

Wednesday, 10:30 am – 11:00 am	Room: Hall	Demo-3
Reusable Collections of Web-Based Program Animations	<i>Jaime Urquiza-Fuentes, J. Angel Velazquez-Iturbide</i>	
Online Tutors for C++/Java Programming	<i>Amruth Kumar</i>	

5.7 Posters

Monday, 10:50 am – 11:20 am	Room: Hall	Posters-1
[P1-01] Students Evaluating Faculty: A Subjective Process	<i>Jacobo Carrasquel</i>	
[P1-02] Computing Curricula Overview Project	<i>John Impagliazzo</i>	
[P1-03] Advanced Programming in Java Workshop — Teaching Methodology	<i>Tamar Benaya, Ela Zur</i>	
[P1-04] Using the BlueJ IDE in a Data Structures Course	<i>James H. Paterson, John Haddow, Miriam Birch, Alex Monaghan</i>	
[P1-05] Introducing Object-Oriented Analysis and Design in Undergraduate Courses: A Pattern-based Approach	<i>Haitham S. Hamza</i>	
[P1-06] Learning Repetition Structures in Programming	<i>Maria José Marcelino</i>	
[P1-07] Why Children Are Out of the CS Rethinking Process?	<i>Giovanni M. Bianco and Simonetta Tinazzi</i>	
[P1-08] Weathering MindStorms with Drizzle and DIODE in CS0	<i>J.C. Ernest, A.S. Bowser, S. Ghule, S. Sudireddy, J.P. Porter, D.A. Talbert, and M.J. Kosa</i>	
[P1-09] Knowledge Sharing as a Innovative Educational Practice: Educating Knowledge Technologies	<i>Peter Mikulecky</i>	
[P1-10] Guidelines for a Multiple-Goal CS Introductory Course: Algorithm Problem-Solving Woven into OOP	<i>Orna Muller, Bruria Haberman</i>	
[P1-11] Distributed Team Performance in Software Development	<i>M. L. Hause</i>	
[P1-12] Computer Game Arena: a Showcase for Computer Game Projects	<i>Edmond Cyril Prakash</i>	

Monday, 3:20 pm – 3:50 pm		Room: Hall	<i>Posters-2</i>
[P2-01]	Teaching XML in a Web Development Context	<i>James H. Paterson, Frances McCormick, Gerry Creechan</i>	
[P2-02]	Teaching to Analyze Solutions Using FGA	<i>Ilana Bass, Dvir Lanzberg</i>	
[P2-03]	Curricular Projects of the ACM Two-Year College Education Committee	<i>Robert D. Campbell, Elizabeth K. Hawthorne, Karl J. Klee</i>	
[P2-04]	Reductive Thinking in Undergraduate CS Courses	<i>Michal Armoni, Judith Gal-Ezer</i>	
[P2-05]	Application of Topic Maps in E-Learning Environment	<i>Kamila Olsevicova</i>	
[P2-06]	"Computer Science, Academy and Industry" Educational Project	<i>Cecile Yehezkel, Bruria Haberman</i>	
[P2-07]	Two Possible Approaches for an Intermediate GUI Course	<i>Rui Pais, João Paulo Barros</i>	
[P2-08]	Computing History: Interesting Times	<i>David Hemmendinger</i>	
[P2-09]	Extending Undergraduate CS Programs With Informatics: Emphasizing Software and System Design in Context	<i>David G. Kay, Andre van der Hoek, Debra J. Richardson</i>	
[P2-10]	The Difficult Art of Pruning in Favour of Creative Thinking	<i>Riccardo Massarelli</i>	
[P2-11]	Exploiting Visual Feedback to Teach Fundamental Concepts in Undergraduate Artificial Intelligence	<i>Terence Clifton</i>	
[P2-12]	Challenges in Teaching the Pumping Lemma in Automata Theory Course	<i>Mark Trakhtenbrot</i>	

Wednesday, 10:30 am – 11:00 am		Room: Hall	<i>Posters-3</i>
[P3-01]	Design, Development, and Validation of a Learning Object for CS1	<i>Gwen Nugent, Leen-Kiat Soh, Ashok Samal, Suzette Person, Jeff Lang</i>	
[P3-02]	Reverse Engineering Techniques to Enhance Software Engineering Education	<i>Ahmad Ghafarian</i>	
[P3-03]	ExploreCSEd: Exploring Skills and Difficulties in Programming Education	<i>Ioanna Stamouli, Marjahan Begum, Rebecca Mancy</i>	
[P3-04]	Knowledge-Based Support of Newcomers Integration into a Organization	<i>Vladimir Bures, Daniela Ponce</i>	
[P3-05]	Moving from Mailing Lists to Web-Based Discussion Forums	<i>Artur Miguel Dias</i>	
[P3-06]	Introducing Recursion by Using Multimedia	<i>Tammy Rosenthal</i>	
[P3-07]	Toward Integrating Computing Concepts into the K-12 Curriculum	<i>Cindy Hood, D.J. Hood</i>	
[P3-08]	Implicit Functions Lab: A Collaboratory for Computer Graphics	<i>Edmond Cyril Prakash</i>	
[P3-09]	Bridging Media Breaks in Presence Presentations	<i>Georg Turban</i>	
[P3-10]	What Attracts Women to CS?	<i>Vicki L. Almstrum, Mary Z. Last</i>	
[P3-11]	Use a Little History	<i>John Impagliazzo</i>	
[P3-12]	Using Hands-on Activities for Motivating Students with OOP before They Are Asked to Implement Them	<i>Xinogalos Stelios, Satratzemi Maya</i>	
[P3-13]	Complex Analysis in a Computer Graphics Course	<i>Vladimir Nodelman</i>	
[P3-14]	Development of Object-understanding Among Students in the Humanities	<i>Morten Lindholm</i>	

5.8 Student Posters

Monday, 10:50 am – 11:20 am	Room: 1D	<i>SP</i>
------------------------------------	----------	-----------

Chair: *Mark Ratcliffe*, University of Wales, UK

In this plenary session students shall present themselves and motivate audience to visit their poster. Student posters will be exhibited on Tuesday, from 10:30 am to 11:00 am.

Tuesday, 10:30 am – 11:00 am		Room: Hall	<i>Student Posters</i>
[SP-01]	Hacking as a Form of "Self-Improvement"		<i>Eric Clark</i>
[SP-02]	A Personalized Visualization Tool for Geo-referenced Information		<i>Sérgio Freitas, Maria Beatriz Carmo & Ana Paula Afonso</i>
[SP-03]	MIG21 API - Multimedia Interactive Groups API		<i>Luís Soares</i>
[SP-04]	BRaiN Research Network		<i>Ricardo Pisa, Vaco Ferreira, Elisabete Jesus & Bruno Carlos</i>
[SP-05]	Ethical Engagement with Data Collection Efforts Related to Fighting Terrorists and Terrorism in the Context of Recent Events		<i>William Pohlhaus</i>
[SP-06]	A Platform for the Generation of Virtual Environments Inhabited by Intelligent Virtual Humans		<i>Miguel Silvestre & Maria Pinto-Albuquerque</i>
[SP-07]	Taking the Bus in the Information Highway System		<i>Duarte Alvim</i>
[SP-08]	The Mule Game Engine - Extending Online Role-Playing Games		<i>Pedro Assunção, Luís Soares, João Luz & Ricardo Viegas</i>
[SP-09]	MindMapX		<i>Leon Davis</i>
[SP-10]	Traditional and More "Exotic" .NET Languages: VB .NET, J#, C# and SML .NET		<i>Viktor Geller</i>
[SP-11]	SoundSpaces - Behavior Based Control System for Multimedia Systems		<i>Raquel Gomes, Ricardo Seabra, João Ventura & Nuno Guedes</i>
[SP-12]	User Interface Considerations for Older Users		<i>John Gould & Matthew Schaefer</i>
[SP-13]	Evolution Lab - The Flexible User Friendly Robot Research Tool		<i>Thomas Larkworthy</i>
[SP-14]	[4]cite		<i>Richard Lawrence</i>
[SP-15]	Understanding Disciplinary Differences: a insight into selecting effective e-learning approaches		<i>Ilaria Liccardi</i>
[SP-16]	Why use an Open Source E-Voting System?		<i>Joana Matos Penha-Lopes</i>
[SP-17]	Reusable Learning Objects: Theory to Practice		<i>Antonio Vinha</i>
[SP-18]	Toward a Useful Synthesis of Views on Ethical Behavior for Computer Professionals in an Interdisciplinary Environment		<i>David Walls</i>

5.9 Tips & Techniques

Monday, 3:50pm – 5:10 pm	Room: 2B	T&T
Chair: <i>Bruce Klein</i> , Grand Valley State University, USA		
Using a PC Simulator to Illustrate Input-Output Programming Techniques	<i>Pedro Medeiros et al</i>	
Academic Jeopardy	<i>Joseph Bergin</i>	
Use of Flash Movies as a Complement When Teaching Gui Programming and Design	<i>Pais and Barros</i>	
Learning Technical Skills with Collaboration and Cooperation	<i>Mary J. Granger</i>	
Learning UNIX in first year of Computer Engineering	<i>Aránzazu Simón-Hurtado and Carlos Vivaracho-Pascual</i>	
Iterative Implementation of DFS	<i>Ilana Bass and Dvir Lanzberg</i>	
Managing the Complexity in First Year Programming	<i>Robert A. Hovis</i>	
Projects in the Programming Languages Course	<i>Amruth N Kumar</i>	
TS05: 150 lines of Java with High Architectural Complexity	<i>Henrik Christensen</i>	

5.10 Working Groups

Monday, 11:20 am – 12:20 pm	Room: 2A	WG-1/2/3 Working Groups
Chair: <i>Janet Carter</i> , University of Kent, UK		
Development of XML-based Tools to Support User Interaction with Algorithm Visualizations	<i>Thomas L. Naps, Guido Roessling</i>	
Facilitating student learning through study abroad and international projects	<i>Ursula Fuller</i>	
Seminal Literature for CS Education Research	<i>Arnold Pears, Stephen Seidman</i>	
Monday, 2:40 pm – 3:20 pm	Room: 2A	WG-4/5 Working Groups
Chair: <i>Janet Carter</i> , University of Kent, UK		
A synthesis of the computing disciplines	<i>Gordon Davies, Lillian Cassel</i>	
Building a Sense of History: Narratives and Pathways of Successful Computing Educators	<i>Vicki Almstrum, Barbara Owens, Lecia Barker</i>	

5.11 Birds-of-a-Feather Session

Monday, 5:20 pm – 6:00 pm

Room: 1A

BOF

Game Development and Computer Science Education

Moderator: *David Finkel*, Worcester Polytechnic Institute, USA

Game Development Education is being introduced at many schools, at the undergraduate and graduate level, as individual courses, minors, and complete majors. Frequently, Computer Science faculty are taking the lead in developing and staffing these programs. What should the content of these programs be? How should the programs be organized? What should be the relationship of Computer Science and Game Development programs?

The BOF Session will provide an opportunity for a wide-ranging discussion of these and related questions. The goals of the session will be to learn about what other schools are doing, start a dialog, and discuss ways to continue the dialog in the future.

The session will end in time to take the shuttle bus back to the conference hotel.

5.12 Closing Session

On Wednesday, the official closing session will take place at about 17:00. There will be closing speeches and the presentation of ITiCSE 2006.

6 Social Events

6.1 Reception on Sunday

There will be a welcome reception for all conference participants and their guests, starting at 19:00 on Sunday, at Hotel Costa da Caparica.

6.2 Excursions and Conference Banquet on Tuesday afternoon

On Tuesday, very shortly after lunch, around 13:50, the conference buses will take all conference participants to Hotel Costa da Caparica.

These same buses will take excursion participants to Sintra and Parque das Nações. All excursion participants should board these buses at Hotel Costa da Caparica at 14:00.

Our recommendations: light clothing, comfortable walking shoes, hats, sunglasses, sun block, expect sunshine!

The buses will return to Hotel Costa da Caparica around 18:00.

Conference buses will transport participants to the conference banquet at Palácio da Trindade in Lisbon. Bus will depart from the Hotel Costa da Caparica between 18:45 and 19:00. The conference banquet will start at 20:00.

It will be difficult to get to the banquet location if you miss these buses so, please, be on time!

Those who have ordered extra tickets for the banquet should be certain that their guests present them at the banquet site.

6.3 Closing Session

Just after the closing session there will be an informal valedictory reception with wine and cheese.

7 Conference Sponsors



Association for Computing Machinery



SIGCSE - ACM Special Interest Group on Computer Science Education



Centre for Informatics and Information Technology



Rectorate of Universidade Nova de Lisboa



Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa



Departamento de Informática



Microsoft Portugal



Fundação Luso-Americana para o Desenvolvimento



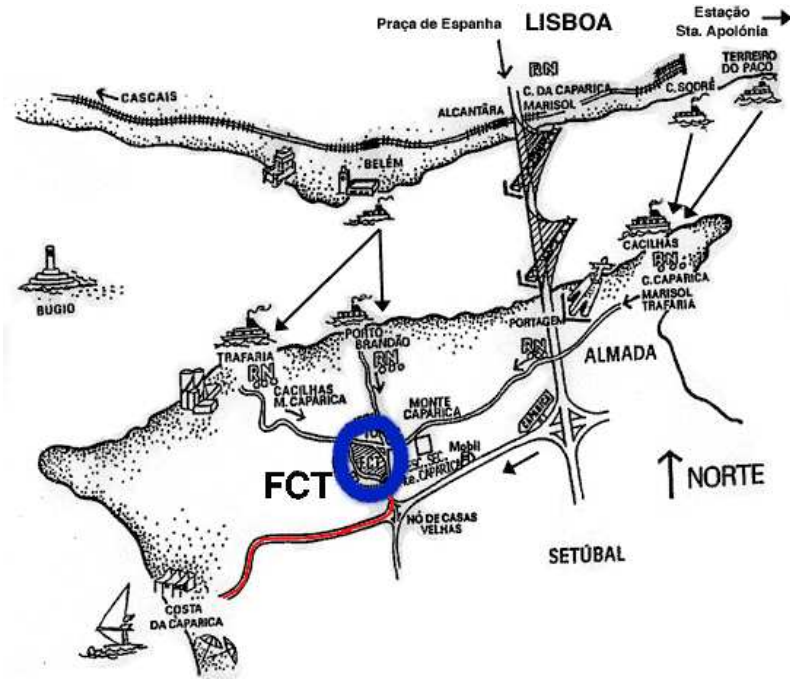
Globalar



Fundação Eugénio de Almeida

8 Annexes

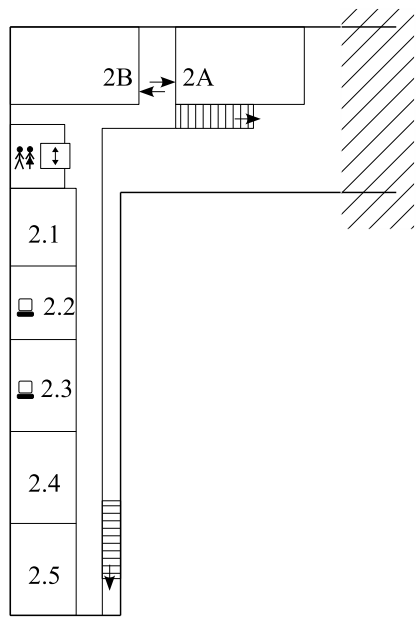
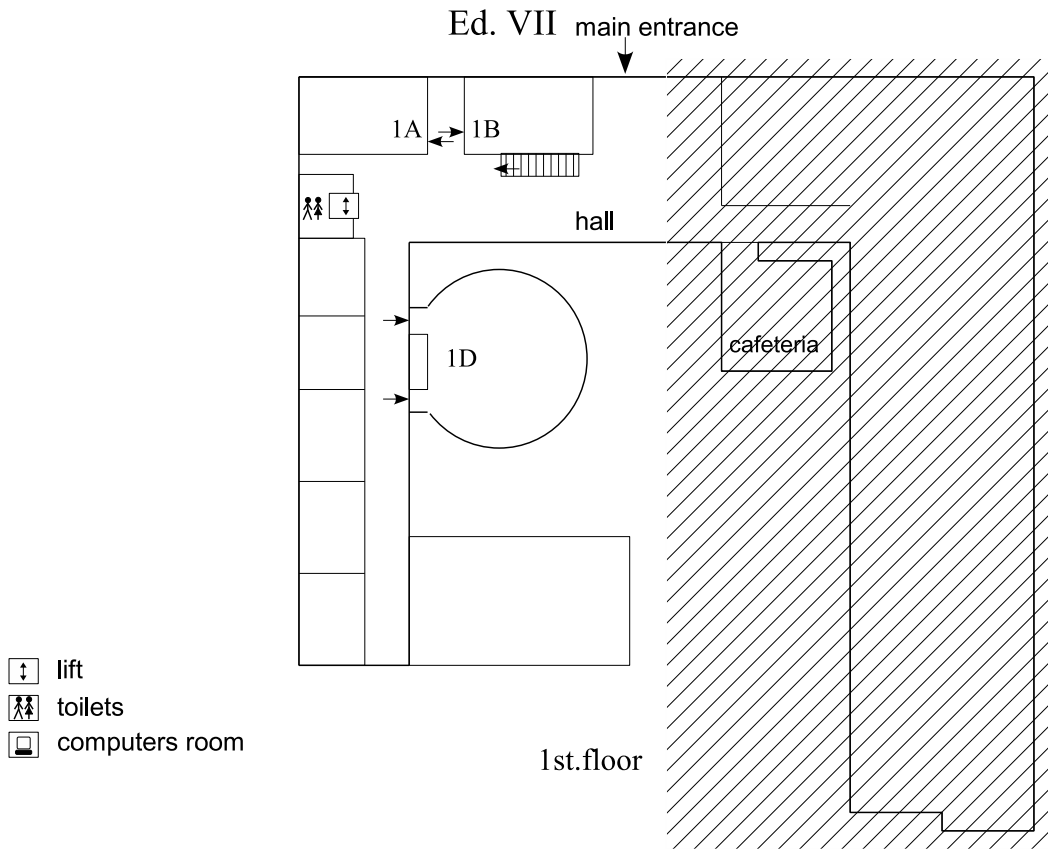
8.1 Tagus River and the South Margin



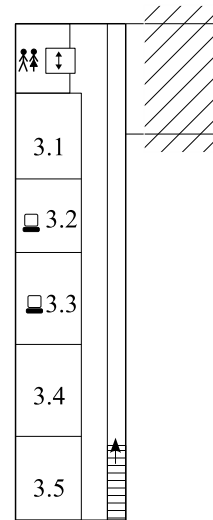
8.2 FCT/UNL Campus



8.3 Conference Building (Ed. VII)



2nd.floor



3rd.floor