

This electronic version differs from the printed one for the following last minute changes and errata:

Broadening Computing Participation in the Navajo Nation

— Ashish Amresh et al.

has been moved from Session 7ε to Session 4β

Why Female Students Are Dropping out of CS Programs

— Rukiye Altin and Andreas Mühling

has been moved from Session 4β to Session 7ε

In the map on the last page

The correct civic number of the entrance to the following locations is ‘5’ (not ‘3’):

Sala Pio XII

Aula 1 - Barelli

Aula 2 - Lazzati

Aula 3 - Panighi

On the last page in the program figure

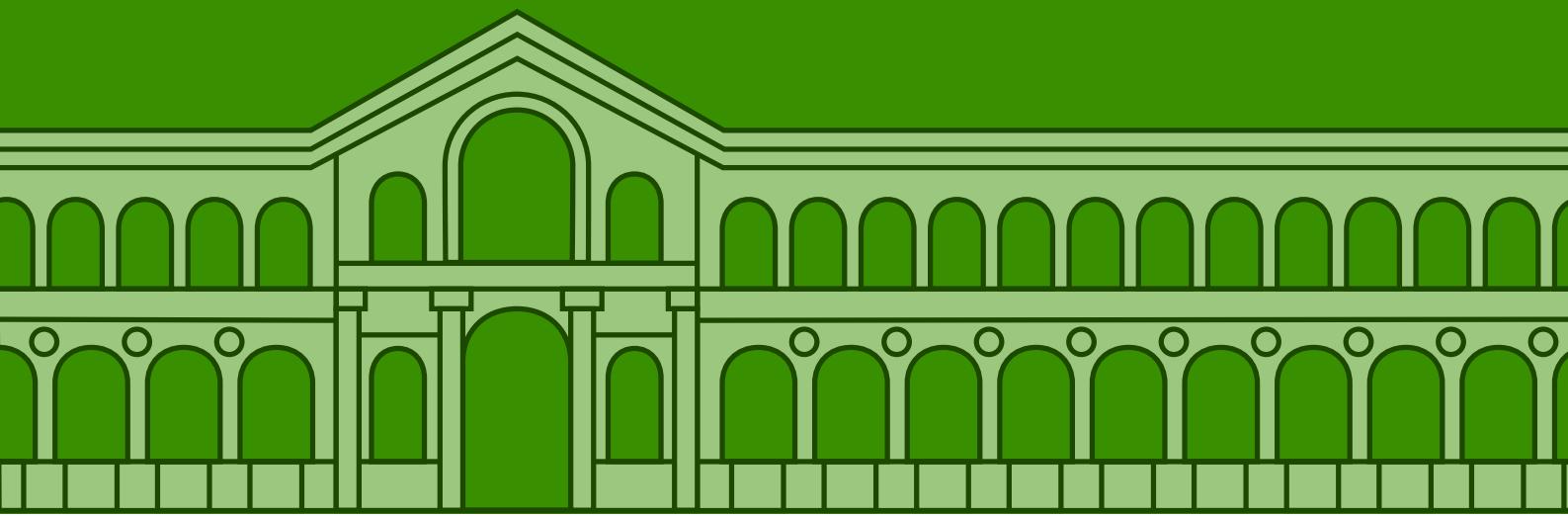
June -> July



UNIVERSITÀ DEGLI STUDI DI MILANO
DIPARTIMENTO DI INFORMATICA

ITiCSE 2024

July 8-10, 2024 – Milano



Monday July 8th

Sala Pio XII

08:00 9:00	Registration
9:00 9:30	Opening session
9:30 10:30	Teaching programming in the age of generative AI — Simone Martini

	Sala Pio XII	Sala Napoleonica	Aula 1 Barelli	Aula 3 Panighi	Aula 2 Lazzati
11:00 12:40	Session 1α Generative AI - perspectives <i>chair: Åsa Cajander</i>	Session 1β Feedback <i>chair: Lina Battistilli</i>	Session 1γ Code quality <i>chair: Jürgen Börstler</i>	Session 1δ Errors and testing <i>chair: Tobias Kohn</i>	Session 1ε Tips, Techniques and Courseware <i>chair: Ethel Tshukudu</i>
	<i>Early Adoption of Generative Artificial Intelligence in Computing Education: Emergent Student Use Cases and Perspectives in 2023</i> — C. Estelle Smith et al.	<i>Feedback-Generation for Programming Exercises With GPT-4</i> — Imen Azaiz et al.	<i>Catalog of Code Quality Defects in Introductory Programming</i> — Anna Řechtáčková et al.	<i>Comparison of Three Programming Error Measures for Explaining Variability in CS1 Grades</i> — Valdemar Švábenský, et al.	<i>Automated Evaluation of Games programmed in Computer Science Assessments</i> — Dieter Meiller et al.
	<i>Let Them Try to Figure It Out First – Reasons Why Experts (Do Not) Provide Feedback to Novice Programmers</i> — Dominic Lohr et al.	<i>Embedded-check a Code Quality Tool for Automatic Firmware Verification</i> — Rafael Corsi Ferrão et al.	<i>Navigating Compiler Errors with AI Assistance: A Study of GPT Hints in an Introductory Programming Course</i> — Maciej Pankiewicz and Ryan Shaun Baker	<i>Active Repos: Integrating Generative AI Workflows into GitHub</i> — Richard Glassey and Alexander Baltatzis	<i>Pytch – Supporting your teaching of coding in classroom</i> — Glenn Strong et al.
	<i>Iterative Student Program Planning using Transformer-Driven Feedback</i> — Elijah Rivera et al.	<i>Are a Static Analysis Tool Study's Findings Static? A Replication</i> — David Liu et al.	<i>Parsons Problems for Professional Learners</i> — Geela Venise Fabic Chee et al.	<i>Insights from the Field: Exploring Students' Perspectives on Bad Unit Testing Practices</i> — Anthony Peruma et al.	<i>Explaining Algorithms with the Visual Programming Language Algot</i> — Sverrir Thorgeirsson and Oliver Graf

Monday July 8th					
	Sala Pio XII	Sala Napoleonica	Aula 1 Barelli	Aula 3 Panighi	Aula 2 Lazzati
14:20 15:10	Session 2α Panel: Computer Science Curricula 2023 (CS2023)	Session 2β Recursion <i>chair: Max Fowler</i>	Session 2γ Computing in schools 1 <i>chair: Jane Waite</i>	Session 2δ Teaching <i>chair: Michael T. Rücker</i>	Session 2ε Sponsor session <i>chair: Bedour Alshaigy</i>
	Rising to the Challenges of Change in AI, Security, and Society — Sheriff Aly, Brett Becker, Amruth Kumar and Rajendra K. Raj	“Like a Nesting Doll”: Analyzing Recursion Analogies Generated by CS Students Using Large Language Models — Seth Bernstein et al.	Experimental Analysis of First-Grade Students’ Block-Based Programming Problem Solving Processes — Gabriele Pozzan et al.	Grasping the Unseen: TA Insights into Teaching Subtle Concepts in Computer Science — Pontus Haglund et al.	GitHub Education
		Why Is Recursion Hard to Comprehend? An Experiment with Experienced Programmers in Python — Aviad Baron et al.	Experiences Trialling a Novel Block-to-text Environment in a Summer School Context — Glenn Strong et al.	Classification of Shared Tasks Used in Teaching — Theresa Elstner et al.	
15:30 16:45	Session 3α Computing in schools 2 <i>chair: Juho Leinonen</i>	Session 3β Assessment and autograding <i>chair: Jonathan Calver</i>	Session 3γ Cybersecurity 1 <i>chair: Leo Porter</i>	Session 3δ Computer science theory <i>chair: Stan Kurkovsky</i>	Session 3ε Databases <i>chair: Rajendra K. Raj</i>
	Feedback Literacy: Holistic Analysis of Secondary Educators’ Views of LLM Explanations of Program Error Messages — Veronica Cucuiat and Jane Waite	Code Generation Based Grading: Evaluating an Auto-grading Mechanism for “Explain-in-Plain-English” Questions — David Smith and Craig Zilles	Research and Practice of Delivering Tabletop Exercises — Jan Vykopal et al.	Redux: An Interactive, Dynamic Knowledge Base for Teaching NP-completeness — Kaden Marchetti et al.	Teaching Multiple Data Models and Query Languages — Jens Ehters
	“Something that Happens Each Day” – Students’ Explanations of What Algorithms Are — Martina Landman and Tobias Kohn	Quickly Producing “Isomorphic” Exercises: Quantifying the Impact of Programming Question Permutations — Max Fowler et al.	From Paper to Platform: Evolution of a Novel Learning Environment for Tabletop Exercises — Valdemar Švábenský et al.	Nondeterministic to Deterministic Finite-State Machine Visualization — Tijana Minić and Marco T. Morazan	Building Blocks Towards More Effective SQL Error Messages — Toni Taipalus and Hilkka Grahn
	Big Ideas of Cryptography in Primary School — Michael Lodi et al.	A Comparison of Proctoring Regimens for Computer-Based Computer Science Exams — Chinedu Emeka et al.	Using Real-world Bug Bounty Programs in Secure Coding Course: Experience Report — Kamil Malinka et al.	Enhancing Feedback Generation for Autograded SQL Statements to Improve Student Learning — Carsten Kleiner and Felix Heine	
					— Eliot Robson et al.

		Tuesday July 9th				
		Sala Pio XII	Sala Napoleonica	Aula 1 Barelli	Aula 3 Panighi	Aula 2 Lazzati
09:00 10:40	Session 4α Generative AI - programming <i>chair: Andrew Luxton-Reilly</i>	Session 4β EDI <i>chair: Rebecca Robinson</i>	Session 4γ Professional skills <i>chair: Mats Daniels</i>	Session 4δ Plagiarism <i>chair: Michael Liut</i>	Session 4ε DC Lightning talks <i>chair: Steve Cooper; Valentina Dogienė</i>	
	<i>Self-Regulation, Self-Efficacy, and Fear of Failure Interactions with How Novices Use LLMs to Solve Programming Problems</i> — Lauren Margulieux et al.	<i>Broadening Computing Participation in the Navajo Nation</i> — Ashish Amresh et al.	<i>Early Computer Science Students' Perspectives Towards The Importance Of Writing</i> — Rutwa Engineer et al.	<i>Semantic Similarity Search for Source Code Plagiarism Detection: An Exploratory Study</i> — Fahad Ebrahim and Milke Joy	<i>Educators as Stakeholders within Adaptive Learning</i> — Nawaf Alajiani	
	<i>Explaining Code with a Purpose: An Integrated Approach for Developing Code Comprehension and Prompting Skills</i> — Paul Denny et al.	<i>Competency and Equity Driven Grading System for Computer Science Curriculum</i> — Benjamin Fine	<i>Student Perceptions of Computer Science as a Profession</i> — Stacy Doore et al.	<i>ChatGPT and Cheat Detection in CS1 Using a Program Autograding System</i> — Ashley Pang and Frank Vahid	<i>Developing Automatic Methods for Teaching Code Quality in Introductory Programming</i> — Anna Rechtáčková	
	<i>Performance, Workload, Emotion, and Self-Efficacy of Novice Programmers Using AI Code Generation</i> — Nicholas Gardella et al.	<i>“You don't see too many of me, too many of us, in that area”: Exploring the Challenges and Opportunities of Promoting STEM Education among Black and Latinx Students</i> — Isabella Lopez and Sanorita Dey	<i>Students' Perceptions of Behaviors Associated with Professional Dispositions in Computing Education</i> — Natalie Kiesler et al.	<i>Towards Better Design and Delivery of SE Team Project Courses</i> — Naya Nasir	<i>Towards the Integration of Large Language Models in an Object-Oriented Programming Course</i> — Bettina Manuela Johanna Kern	
	<i>CS1-LLM: Integrating LLMs into CS1 Instruction</i> — Annapurna Vadaparty et al.	<i>Generation and Evaluation of a Culturally-Relevant CS1 Textbook for Latines using Large Language Models</i> — Ismael Villegas Molina et al.	<i>Improving Dropout Prediction for Informatics Bachelor Students</i> — Ashley Pang and Frank Vahid	<i>Improving Computing Higher Education in Prisons</i> — Sven Grubel	<i>Improving Computing Language Acquisition</i> — Bruno Pereira Cipriano	
			<i>Style Anomalies Can Suggest Cheating in CS1 Programs</i> — Benjamin Denzler et al.	<i>Integrating Sustainability Cases in Higher Computing Education</i> — Bashira Jaradat	<i>A Learning Theory of Programming Language Acquisition</i> — David Zabner	
				<i>Empowering black women in computing: fostering inclusion and belonging through virtual communities</i> — Luce-Melissa Kouaho	<i>A Proposal to Test a Strategy of Interdisciplinary Transfer between Algebra and Computer Science for Self-Efficacy, Optimized Cognitive Load, and Conceptual Understanding</i> — Noah Cowit	
				<i>A Mental leap: impact of Teaching the Math behind Machine Learning Techniques in K-12</i> — Lukas Lehner	<i>Meaningful Highlighting – Improving Educational IDEs to Enhance Code Comprehension for Programming Novices</i> — Annika Vielsack	
					<i>Teaching Cyber Security to High-School Students</i> — Sven Grubel	
					<i>Teaching Programming through Multi-Context Physical Computing</i> — Alexandra Maximova	

Tuesday July 9th						
	Sala Pio XII	Sala Napoleonica	Aula 1 Barelli	Aula 3 Panighi	Aula 2 Lazzati	
11:25 13:05	Session 5α Autograding <i>chair: Carsten Kleiner</i>	Session 5β Emotions, confidence and belonging <i>chair: Fiona McNeill</i>	Session 5γ Virtual tutors <i>chair: James Prather</i>	Session 5δ Ethics <i>chair: Sue Sentance</i>	Session 5ε Tips, Techniques and Courseware <i>chair: Tobias Kohn</i>	
	<p><i>Ordered Network Analysis in CS Education: Unveiling Patterns of Success and Struggle in Automated Programming Assessment</i> — Andres Felipe Zambrano et al.</p> <p><i>A Case For Reflection In Autograding</i> — Chad Hogg</p>	<p><i>Exploring Students' Self-Confidence in Their Programming Solutions</i> — Sven Strickroth</p> <p><i>In-Person vs Blended Learning: An Examination of Grades, Attendance, Peer Support, Competitiveness, and Belonging</i> — Anshul Shah et al.</p>	<p><i>Can Small Language Models with Retrieval-Augmented Generation Replace Large Language Models when Learning Computer Science?</i> — Suqing Liu et al.</p> <p><i>Iris: An AI-Driven Virtual Tutor for Computer Science Education</i> — Patrick Bassner et al.</p>	<p><i>With Great Power Comes Great Responsibility – Integrating Data Ethics into Computing Education</i> — Natalie Kiesler et al.</p> <p><i>Student Perspectives on Using a Large Language Model (LLM) for an Assignment on Professional Ethics</i> — Virginia Grande et al.</p>	<p><i>Simplifying multimedia programming for novice programmers: Medialib and its learning materials</i> — Adam Wynn et al.</p> <p><i>Learn by example in a modern embedded system course</i> — Rafael Corsi Ferrão et al.</p>	<p><i>Programming Workbook: A Collaborative Coding Fusion (Print and Online) for Mastering Programming Fundamentals</i> — Christian Servin</p> <p><i>First Year CS Students Exploring And Identifying Biases and Social Injustices in Text-to-Image Generative AI</i> — Mikko Apila et al.</p>
	<p><i>Scalable Autograding for Quantum Programming Assignments</i> — Jonathan Beaumont and Kathryn Wakevainen</p> <p><i>Improving Student Learning with Automated Assessment</i> — Ruben Acuna and Ajay Bansal</p>	<p><i>On Using Physiological Sensors and AI to Monitor Emotions in a Bug-Hunting Game</i> — Natalia Silvis-Cividjian et al.</p> <p><i>Fostering and Assessing Dispositions by providing Grades a Meaning in a Computing Education Context</i> — Laura Tubino and Andrew Cain</p>	<p><i>Desirable Characteristics for AI Teaching Assistants in Programming Education</i> — Paul Denny et al.</p>	<p><i>Agile Ethics: A Low Stakes, Skills-based Framework for Teaching CS Ethics</i> — Alexi Brooks</p>	<p><i>Databases Without Databases: Projects for Including Database Concepts in Interdisciplinary Curricula with LINQ</i> — Nuno Fachada</p>	

Wednesday July 10th						
	Sala Pio XII	Sala Napoleonica	Aula 1 Barelli	Aula 3 Panighi	Aula 2 Lazzati	
09:00 10:40	Session 6α Working Groups <i>chair: Dennis Bouvier & Ari Korhonen</i>	Session 6β Tools and environments <i>chair: Brent Reeves</i>	Session 6γ Software engineering <i>chair: Cruz Izu</i>	Session 6δ Student success and block-based programming <i>chair: Sean Russell</i>	Session 6ε Live coding <i>chair: Guido Rößling</i>	Session 6ζ Scalable Feedback for Student Live Coding in Large Courses Using Automatic Error Grouping <i>— Sven Strickroth</i>
	<i>WG 1: Computing Education in Africa</i> <i>WG 2: A Multi-Institutional-Multi-National Study into the Impacts of AI on Work Practices of IT Professionals and Implications for Computing Students</i> <i>WG 3: Experiences of Instructors Who Teach Capstone Courses in the Computing and Information Technology Fields</i> <i>WG 4: Curriculum Analysis for Data Systems Education</i> <i>WG 5: All for One and One for All – Collaboration in Computing Education: Policy, Practice, and Professional Dispositions</i> <i>WG 6: Equity-Minded Computer Science Undergraduate Curriculum</i> <i>WG 7: What We Talk About When We Talk About K-12 Computing Education</i>	<i>Design and Evaluation of a Web-based Distributed Pair Programming Tool for Novice Programmers</i> <i>— José Colin et al.</i> <i>Containerizing CS50: Standardizing Students' Programming Environments</i> <i>— David Malan</i> <i>MemStep: An Interactive Tool for Constructing and Visualizing the Run-Time Memory Layout of Java Programs</i> <i>— Michelle Pham et al.</i> <i>The Shell Tutor: An Intelligent Tutoring System For The UNIX Command Shell And Git</i> <i>— Jaxton Winder et al.</i> <i>WG 5: All for One and One for All – Collaboration in Computing Education: Policy, Practice, and Professional Dispositions</i> <i>WG 6: Equity-Minded Computer Science Undergraduate Curriculum</i> <i>WG 7: What We Talk About When We Talk About K-12 Computing Education</i>	<i>External Projects and Partners: Addressing Challenges and Minimizing Risks from the Outset</i> <i>— Stan Kurkovsky et al.</i> <i>Code Refactoring Strategies of Third Year Software Engineering Students</i> <i>— Roshan Rajapakse and Claudia Szabo</i> <i>Utilizing the Constrained K-Means Algorithm and Pre-Class GitHub Contribution Statistics for Forming Student Teams</i> <i>— Jialin Cui et al.</i>	<i>Investigating Academic Confidence, Workload Stress, and Performance in a BlendFlex Computer Science Course</i> <i>— Madison Book et al.</i> <i>NextBlocks: An Interactive Block Programming Platform</i> <i>— Duarte Pereira et al.</i> <i>Block-Based Programming for Mobile with Conventional Exceptions and Automatic Evaluation</i> <i>— Aryobarzan Atashpendar and Steffen Rothkugel</i>	<i>Comparing the Experiences of Live Coding versus Static Code Examples for Students and Instructors</i> <i>— Andrea Watkins et al.</i> <i>A Comparison of Student Behavioral Engagement in Traditional Live Coding and Active Live Coding Lectures</i> <i>— Anshul Shah et al.</i> <i>Assessing Live Programming for Program Comprehension</i> <i>— Oliver Graf et al.</i>	<i>From Visual Arts to Programming: Exploring the Impact on Achievement in Constructionist College CS1 Classes</i> <i>— Oladele O. Campbell et al.</i>

Wednesday July 10th

		Sala Pio XII	Sala Napoleonica	Aula 1 Barelli	Aula 3 Panighi	Aula 2 Lazzati
11:25 12:40	Session 7α Parsons problems <i>chair: Sara Hooshangi</i>	Session 7β Computing in schools 3 <i>chair: Michael Caspersen</i>	Session 7γ Curriculum and learning resources <i>chair: Rita Garcia</i>	Session 7δ Cybersecurity 2 <i>chair: Roger McDermott</i>	Session 7ε Broadening participation 1 <i>chair: Monica Divitini</i>	Session 7ε Broadening participation 1 <i>chair: Monica Divitini</i>
	<i>Evaluating Micro Parsons Problems as Exam Questions</i> — Zhan Wu and David Smith	<i>Customizing ChatGPT to Help Students Learn Through Conversation</i> — Matthew Frazier et al.	<i>Students: Videos Created by and for Students, Active Learning Resources in Large and Diverse Computer Science Classrooms</i> — Yige Chen and Bernardo Pereira Nunes	<i>A User Experience Study of MeetingMayhem: a Web-Based Game to Teach Adversarial Thinking</i> — Shan Huang et al.	<i>Why Female Students Are Dropping out of CS Programs</i> — Rukiye Altin and Andreas Mühlung	<i>Uncovering Meaningful Computing Contexts for Incarcerated College Students</i> — Emma Hogan et al.
	<i>Exploring the Acceptance and Effectiveness of Parsons Problems on Scaffolding CS1 Retakers</i> — Felipe Sanhueza et al.	<i>Computational Thinking for Self-Regulated Learning</i> — Stefan Pasterk and Gertraud Benke	<i>Designing a CURE for CS1</i> — Kevin Buffardi et al.	<i>Design and Use of Privacy Capture-the-Flag Challenges in an Introductory Class on Information Privacy and Security</i> — Wolfgang Vigl and Svetlana Abramova	<i>The CS1 Python Bakery: A Modern “Batteries Included” Open-Source Curriculum with All the Fixings</i> — Austin Bart et al.	<i>Equitable Access to Cybersecurity Education: A Case Study of Underserved Middle School Students</i> — Madison Thomas et al.
14:30	Session 8α Working Groups <i>chair: Dennis Bouvier & Ari Korhonen</i>	Session 8β Student engagement <i>chair: Marie Devlin</i>	Session 8γ Computing education research and perception <i>chair: Kevin Buffardi</i>	Session 8δ Supporting students <i>chair: Jack Parkinson</i>	Session 8ε Broadening participation 2 <i>chair: Ouldooz Baghban Karimi</i>	Session 8ε Broadening participation 2 <i>chair: Ouldooz Baghban Karimi</i>
	<i>WG8: Designing a Pedagogical Framework for Developing Abstraction Skills</i> — Asma Shakil and Paul Denny	<i>Enhancing Student Engagement in Large-Scale Capstone Courses: An Experience Report</i> — Ismaila Temitayo Sanusi and Ethel Tshukudu	<i>Exploring Barriers and Strategies to boost Scientific Output in Computing Education in Africa</i> — Ismaila Temitayo Sanusi and Ethel Tshukudu	<i>TeachNow: Enabling Teachers to Provide Spontaneous, Realtime 1:1 Help in Massive Online Courses</i> — Ali Malik et al.	<i>Capital in Computing Education: Investigating Factors Underlying Participation</i> — Thom Kunkeler and Aletta Nylen	<i>Bringing Our Full Selves Into Computing: Designing, Building, and Fostering Equitable Computing Education Communities</i> — Francisco Enrique Vicente Castro et al.
	<i>WG9: How Are Instructors Incorporating Generative AI into Teaching Computing?</i>	<i>Agora: Motivating and Measuring Engagement in Large-Class Discussions</i> — Hedayat Zarkoob et al.	<i>Building Student Support for Computing Students: How Do Students Respond to Different Models?</i> — Fiona McNeill et al.	<i>Exploring Perception in Computer Graphics Education</i> — Amani Najimudeen and Anne-Kathrin Peters		

Monday July 8th			Tuesday July 9th			Wednesday July 10th		
09:00	Opening		09:00	4 α - 4 δ	4 ε	09:00	6 α	6 β - 6 ε
09:30	Keynote		Papers	DC Lightning Talks		Working Groups	Papers	
10:30	Coffee-break – Posters A		10:40	Coffee-break – DC Posters		10:40	Coffee-break – Posters B	
11:00	1 α - 1 δ	1 ε	11:25	5 α - 5 δ	5 ε	11:25	7 α - 7 ε	
	Papers	Tips, Techniques, and Courseware	Papers	Tips, Techniques, and Courseware		Papers		
12:40	Lunch (Cafeteria)		13:05	Lunch (Cafeteria)		12:40	Lunch (Cafeteria)	
14:20	2 α Panel	2 β - 2 δ Papers	14:30 17:30	Excursions city tours + museum visits		14:30	8 α Working Groups	8 β - 8 ε Papers
15:10	Refreshments – Posters A					15:20 16:30	Closing & Awards	
15:30	3 α - 3 ε Papers							
16:50	Concert							
18:00	Reception (Rettorato)							
			19:00	Banquet (Rettorato)				

19:00	Banquet (Rettorato)
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