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Scientific visualization - some novel approaches to learning Ken Brodlie, Jason Wood and Helen Wright **Short papers** An interactive environment for the teaching of computer architecture P. S. Coe, L. M. Williams and R. N. Ibbett Graphical visualization of the evaluation of functional programs Ricardo Jiménez-Peris, Cristóbal Pareja-Flores, Marta Patiño-Martínez and J. Ángel Velázquez-Iturbide Algorithm animation of neural networks David Jackson and Ian G. Morton

Foundations of Computer Science

Long paper

Foundations of Computer Science: what are they and how do we teach them? Viera K. Proulx, Richard Rasala and Harriet Fell **Short papers** A novice programmer's support environment Blaise W. Liffick and Robert Aiken

Active learning and its use in Computer Science Jeffrey J. McConnell Computer supported peer learning in an introductory Computer Science course David Finkel and Craig E. Wills

Using GUI, OOP and multimedia in introductory programming classes Short papers

Teaching introductory programming in the multimedia world Ursula Wolz, Scott Weisgarber, Daniel Domen and Michael McAuliffe From software user to software author: an initial pedagogy for introductory object-oriented computing Mark Woodman and Simon Holland Using multimedia and GUI programming in CS 1 David Mutchler and Cary Laxer

Visualization and animation

Long paper

Algorithm visualization served off the World Wide Web: why and how Thomas L. Naps **Short papers** Integrating animations into courses Susan H. Rodger Review of animation systems for algorithm understanding Judith Wilson, Robert Aiken and Irvin Katz Tools for creating portable demonstration programs Eric Roberts

Using the Internet and WWW in courses Long paper

Appropriate use of the Internet in Computer Science courses C. J. Pilgrim and Y. K. Leung **Short papers** Managing the development of a Web based project Pamela B. Lawhead and Kathryn F. Gates Using CD-ROMS and local webpages to provide course materials for distance-students V. E. Veraart and S. L. Wright Extending the conversation: integrating email and Web technology in CS programming classes David M. Arnow and Dayton Clark

Using the Internet and multimedia to support classes Long paper

Using Internet technology for course support José Eduardo Pina Miranda and Jorge Sousa Pinto

Short papers

Integrating World Wide Web technology into undergraduate education G. Scott Owen Computer assistance for managing educational resources and managing collaborative educational processes D. Siviter Integrating Internet tools into the soft side of informatics education Catherine M. Beise

Using multimedia in systems development Long Paper

A multimedia approach to providing software project experience for postgraduate students Helen Sharp and Pat Hall **Short papers** *MuPMoTT - A multimedia based tool supporting the teaching of process modelling within a framework of Structured System Analysis.* Paul Marsden and Mark O'Connell *Design, implementation and testing techniques for multimedia industrial experience projects* Ainslie E. Ellis *An adventure game approach to multimedia distance education* Linda Carswell and David Benyon

Groupware and CASE tools in informatics education Long Paper

Integrating CSCW in a cooperative learning environment to teach information systems Nguyen Vi Cao, Atika Laribi, Michel Léonard, Olivier Parchet and Catherine Zellweger

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Integrating CASE Tools into the CS/CIS curriculum Mary J. Granger and Joyce Currie Little Software quality lab in the informatics option of Gdañsk TU Electronics Faculty Krzysztof Goczyla and Stanislaw Szejko Gathering together through groupware in an MA programme

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Distance education

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Computing by distance education: problems and solutions
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Distance education over the Internet
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Mistakes to avoid in the introduction of compressed video
James E. Miller

Interactive remote instruction: initial experiences K. Maly, C. Wild, C. M. Overstreet, H. Abdel-Wahab, A. Gupta, A. Youssef, E. Stoica, R. Talla and A. Prabhu Networks, parallel and distributed computing **Short papers** Parallel systems development in education: a guided method E. Luque, J. Sorribes, R. Suppi, E. Cesar, J. L. Falguera and M. Serrano. Teaching parallel processing: development of curriculum and software tools Jan Kwiatkowski, Marek Andruszkiewicz, Emilio Luque and Tomas Margalef, Jose Cunha and Joao Lourenco, Henryk Krawczyk and Stanislaw Szejko Packet tracing: a new paradigm for teaching computer network courses Willis F. Marti, John A. Hamilton, Jr. and Udo W. Pooch

Panel

Challenges of Using Groupware to Teach Groupware Margaret M. McManus (Panel Moderator), Cathy Beise (Discussion Leader), John Saunders, John A. Cross and Michael B. Twidale

Working Group Reports

Use of laboratories in Computer Science education: guidelines for good practice Report of the Working Group on Computing Laboratories

Interactive multimedia pedagogies Report of the Working Group on Interactive Multimedia Pedagogy

An overview of visualization: its use and design Report of the Working Group on Visualization

Evaluation: turning technology from toy to tool Report of the Working Group on Evaluation

Enhancing teaching using the Internet Report of the Working Group on the World Wide Web as an Interactive Teaching Resource

Posters

Teaching with technology at my fingertips Elizabeth S. Adams A built-in educational platform for integrating computer engineering technologies Joan Batlle, Joan Martì and Lluìs Pacheco Proposal for an on-line Computer Science courseware review Michael Goldweber Using symbolic computation for teaching Data Structures and Algorithm Analysis Joan Krone Interdisciplinary teleteaching based on WWW and Internet Alexander Schill

Integrating multimedia and telecommunications laboratory experiences into teacher education Harriet G. Taylor Desktop teaching: on the students desk John Motil How visual software influences learning in college students Bunny J. Tjaden DD-Mod: a library for teaching distributed programming Ricardo Jiménez-Peris, Marta Patiño-Martínez and Jesús M. Milán-Franco Using Visualization in teaching Data Structures and Algorithms Myles F. McNally An inexpensive programming toolset for algorithm development J. Angel Velazquez-Iturbide, Ana Maria Cosias Rincon and Nuria Llorente Fernandez Computer-Based High School Algebra I Kathleen Wohlgehagen and Cathleen Norris Informatics in an advanced Mathematical High School Elena Andreeva and Igor Gushchin Interactive Tutorials on the World Wide Web John Rosbottom and Adrian Meads

Demonstrations

Interactive learning with Gateway Labs Mary Johansen, Jason Kapusta and Doug Baldwin Windows-based applications in Visual Basic using project teams Sheila E. Castaneda Visualizing recursion and linked lists Cheng-Chih Wu, Janet Mei-Chuen Lin and Guey-Fa Chiou kined/scotty: tools for network documentation, monitoring and troubleshooting Kenneth H. Jacker A Modula-2 interpreter/visualizer Ricardo Jiménez-Peris and Marta Patiño Martínez *RCOS.java: an animated operating system for computer science education* David Jones Simulation programs for studying computer organization Najib Nadi Network management teaching - managing a simulated network **Colin Pattinson** ViLi (Vision LISP): a software environment for teaching Image Processing and Analysis Javier Sanchez and Jordi Vitria HIPE: A Turbo-like environment for functional programming J. Angel Velazquez-Iturbide DATATUTOR: a package for teaching Data Representation **Douglas Hainline** Simulator for visualizing data link layer protocols E. W. Grundke and Zhengya Zhu