

## FRANCESCO RICCI

Born in Venice, Italy, on 25/12/1959.  
Nationality: Italian.  
Marital status: married with two children.

### **Work Address**

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### **Current Position**

Associate professor at the Free University of Bozen-Bolzano.

## **Education**

Fall 1983: Degree in Mathematics (rates 110/110 lode), Padova University, Italy. Thesis: The Laplace-Beltrami Operator on Real Vector Fiber Bundles. Supervisors: prof. E. Vesentini (Scuola Normale Superiore), prof. V. Cristante (University of Padova).

Jan./84 to Sep./86: Post degree student (“perfezionamento”) in Mathematics at Scuola Normale Superiore, Pisa, Italy.

## **Work Experience**

### **1) Free University of Bozen-Bolzano (October 2006 to now)**

I’m associate professor of computer science in the Database and Information Systems group.

### **2) Electronic Commerce and Tourism Research Laboratory at ITC-irst Trento (July 2000 to July 2006)**

IRST is a Research Institute with over 100 researchers specialised in Artificial Intelligence and Microelectronics. The main objectives of IRST are to be a point of reference in the international scientific community and to foster technological development in the local productive community.

## Role and Status

I'm **senior researcher, second level R2** (contract of research institutions in Trentino), equivalent to **Associate Professor** (Professore Associato in the Italian University contract).

I'm the director of a research laboratory, established on July 2000, focussed on eCommerce and Tourism (eCTRL) at ITC-irst. eCTRL is aimed at creating a multidisciplinary approach towards IT&T, and developing a new generation of web enabled intelligent tools that can be exploited by industry partners. I've set up this laboratory recruiting people internationally, defining research plans and acquiring grants from funding agencies (mainly , European IST projects). The laboratory is now composed of 13 persons (2 staff, 6 researchers, 3 technicians, 1 PhD student). The laboratory has cooperated, from July 2000 to December 2003, with the University of Trento, Department of Computer and Management Sciences, Economics and Business Faculty , directed by Prof. Mariangela Franch. The two units (ITC-irst and Univ. of Trento) were coordinated by prof. Hannes Werthner (on leave from Vienna University of Econ. and Bus. Ad.).

eCTRL was initially funded by a local bank foundation (1.9 M Euro for three years). After, on 2001, we have obtained two additional grants from EU (IST 5<sup>th</sup> Framework Programme R&D Projects), that enabled us to start cooperating with major players in the IT and Tourism sector, such as:

- Vienna University of Economics and Business Administration (A): J Mazanec, K. Woeber, A. Zins.
- University of Karlsruhe (D): prof. R. Studer e S. Staab
- University of Surrey (GB): prof. D. Buhalis
- University of Haifa (IL): prof. Martin Charles Golumbic, Irith Ben-Arroyo Hartman e Merav Hadad
- EC3 – electronic commerce competence center (A): prof. H. Werthner
- e-Business Management School/ISUFI (I): prof C. Petti and A. Romano
- CISET – International Centre of Studies on the Tourist Economy (I): M. Manente and V. Minghetti.
- National Laboratory for Tourism and eCommerce - University of Temple (USA): prof. D. Fesenmaier
- IFITT - International Federation for IT and Travel&Tourism: J. Margreiter
- TIScover AG - Travel Information Systems (A): K. Planksteiner
- Start-Amadeus (D): W. Hoepken
- Icep - Portugal, Investimentos Comercio e Turismo (PT): L. Costa.
- TripleHop Technologies (USA): J. Delgado
- CTS (I): F. Iacono
- Sun Italia: Franco Roman

## Main Scientific and Technological Achievements

- I have defined an innovative methodology for recommending products bundles (itineraries). It is a hybrid approach, that integrates content-based filtering, implemented by a mixed-initiative query rewriting system, and collaborative filtering by session correlation. Sessions are modelled as structured cases and the ranking procedure exploits a double-similarity computation: similarity of recommendation session (context) and similarity of products bought in similar contexts.
- This methodology has been implemented in a reusable software framework, called Trip@dvice, and on top of this we have built three prototypes: NutKing, Dietorecs and MobyRek. The first two are web based, whereas the third, MobyRek, runs on smart phones, provides support during the travel and exploits both pre-travel decisions and contextual preferences.
- We have developed the Harmo suite, a software tool based on an ontology-mediated approach which performs semantic data reconciliation among electronic tourism systems.

### 3) Sodalìa, Trento (July 98 to July 2000)

Sodalìa is a (ISO9001, CMM Level 3) software factory that provides advanced telecommunications products, solutions and services to telecommunications companies world-wide. More info at [www.sodalìa.it](http://www.sodalìa.it)

#### Role

I worked in the Research and Technology Department (Process and Reuse Technologies) as **system architect** (level G of the Italian Telecommunication Contract, quadro).

#### Achievements

- Evaluated innovative technologies and built up the software application model for web based solutions that fits the company software framework (based on J2EE and CORBA architectures). Deliverables: evaluation of technologies and guidelines reports.
- Worked as consultant, both in Sodalìa and in Telecom Italia, guiding the design of software architectures for complex telecommunication applications based on CORBA (OrbixWeb, Wonderwall, Orbix Names, etc.) and on the Java 2 Platform Enterprise Edition (Servlet, JavaServer Pages, EJB). Deliverables: courses prepared and taught; reports.
- Defined the architecture of a Trouble Ticketing application re-engineering a legacy system (COBOL/CICS). We have used BEA Tuxedo middleware, BEA Jolt and BEA Connect and from that experience we extracted guidelines for the re-engineering of legacy applications in Telecom Italia. Deliverables: System Architecture and Re-engineering Guidelines report.

#### Projects

*ACL-RE* : Web based system supporting the trouble ticketing business process in Telecom Italia. The objective of the project was to reuse existing COBOL/CICS modules, restructuring those module in a more rational functional decomposition and providing a new java based user interface. Key technologies: UML (modelling), Bea Tuxedo (transaction management), Java (User Interface).

*CSM* : a customer support system for Telecom Italia top clients. The system enables top customers to monitor the state of their virtual private networks, to raise trouble tickets, to interact with support services. Key Technologies: (UML) modelling, Java servlet and Java-Server Pages (user interface), CORBA (integration architecture and server programming), DBMS (Oracle).

### 4) Istituto per la Ricerca Scientifica e Tecnologica (IRST), Trento (Jan. 88 to Jul. 98)

#### Roles

- Jan. 88 to Dec. 92: **Researcher R1** in the Expert System group (coordinator of the group).
- Jan. 93 to Dec. 93: **Project manager and researcher R1** in the Industrial Relations department
- Jan. 94 to Dec. 94: **Leader of the laboratory** "Knowledge Representation and Reasoning". I supervised the work of six researchers. I was responsible for both the economic aspects (budget, funding, grants, ...) and the research activities of the laboratory.
- Jan. 95 to Dec. 95: **Leader of the project** "Method for Interactive Planning"
- May. 95: I won an internal evaluation as Researcher R2 (seconda fascia), equivalent to a position of associate professor (in the Italian University contract).
- *Jan. 96 to Jul. 96*: **Leader of the project** "Reasoning for Decision Support". I supervised the work of four researchers plus some students. I was responsible for all the scientific and technological choices and cooperate with the head of the division to assure project funding.

- *Jan. 97 to Jul. 98: Leader of the project* “Case-Based Reasoning”.
- *Mar. 98:* I was declared, with effect starting from Jan. 98, Researcher R2.

### **Achievements**

- Obtained funds from EU projects (Esprit, Brite, Sprint), Italian Research Organisations (Enea, CNR), Industry (SGS, Cisa) and Public Institutions (Autonomous Province of Trento) to cover 50% of the total research costs.
- Managed successfully, as principal investigator, a number of international and national research projects.
- Started new research areas in the institute, such as constraint based reasoning and cased-based reasoning.

### **5) Enichem, Milano (Sep./86 to Dec./87)**

**Role:** programmer/analyst.

#### **Achievements:**

- Designed and developed an expert system for budget control.
- Designed and developed a number of office automation applications with the aid of fourth generation languages (Lotus-123, DBase3, Clipper, and AS on the mainframe).

### **6) Scuola Normale Superiore, Pisa (Jan./84 to Sep./86)**

**Role:** Post degree student.

#### **Achievements:**

- Taught undergraduate courses (Calculus).
- Research in Global Analysis on real Riemann manifolds.
- Edited lecture notes on Differential Topology.

## **Research Projects**

*European Tourist Destination Portal* – <http://etd.ec3.at> - (April 2004 to October 2005)

This new initiative is aimed at designing and developing a unique access point to all European National Travel Organizations web sites. This new multilingual (En, Fr, Ge, It, Sp and Pt ) web site will bring a better visibility to Europe as a unique and composite destination, and will provide a quicker search tool to select the most suitable information. The portal content will be extracted from the NTOs web sites and data bases, and it will be integrated in the portal using the Harmonise semantic data-reconciliation tool. The user will be supported by the portal through a wide range of services, including, trip planning and product/service recommendation. The project is coordinated by EC3 (A), and the other partners are: TISCover (A), Siemens (A), Lixto (A) and ITC-irst (I). Overall budget 1.9 MEuro (equal to funding), and ITC-irst budget is 193.800 Euro.

I participated to the preparation of the proposal and now I'm participating to the project as member of the Advisory Board.

*HarmoTen* – <http://www.harmon-ten.info> – eTEN C510828 – (May 2004 – October 2005)

This project is a follow up of a previous project (Harmonise). The technologies developed in Harmonise, will here validated in 11 case studies in different European countries. This will enable us to further improve and engineer the technology and to design a viable business model for the service (data reconciliation and

interoperability infrastructure). HarmoTen is funded by the EU, in the eTen programme. The project coordinator is EC3 (A), and the other partners are: IFITT (A), Umbria Region (I), Consorzio Pisa Ricerche (I), ITC-irst (I). The overall budget is 829.836 Euro. ITC-irst budget is 21.600 Euro.

I participated to the preparation of the proposal and now I'm participating to the project as ITC-irst responsible.

*DieToRecs* - <http://dietorecs.itc.it> – IST-2000-29474 (July 2001 to May 2004)

This project is aimed at developing and validating a recommender system for tourist destination decision-making. The DieToRecs recommender system provides an interactive web-based tool capable of supporting the structured process of selecting a tourist destination and bundling a personalised trip plan. DieToRecs accesses and integrates, by using a mediator architecture, data managed by two existing tourist web portals (trentino.to tiscover.com). DieToRecs recommender was designed as an adaptive system, i.e., capable to adapt the dialogue process and the suggested products/services as it learns about the user. System learning and adaptation was performed at each session level (short term) and collecting a memory of previous supported human/computer recommendation sessions. The dialogue is driven by an explicit model of the tourist destination selection. DieToRecs supports product aggregation for a given destination, letting the user to build a personalised dynamic package. Key technologies: XML, OLAP, Case-Based Reasoning, Adaptive User Interfaces, Web and Data Integration Architectures. I'm the Project Director and eCTRL is working in partnership with: TISCover A.G.(A); University of Vienna (A), University of Urbana Champaign (USA), APT Trentino (I). Budget 1.5 Meuro.

I prepared the project proposal and coordinated the whole project as principal investigator.

*eCommerce and Tourism* – <http://ectrl.itc.it> (Jul. 2000 to Feb. 2004)

This was the strategic and foundational project of the laboratory. The objective was to create a multidisciplinary approach towards IT and Tourism (in partnership between ITC-irst and University of Trento) and build up in Trento an international point of reference for IT&T. In the short term we have developed a new generation of web enabled intelligent tools (recommendation technologies) and built some real working prototypes (web based travel destination decision aid system and a mobile recommender system for service selection). In partnership with the Azienda di Promozione Turistica del Trentino we have developed a recommender system for touristic products/services information selection and travel planning. Seven researchers worked on this project. A first system prototype, called NutKing, has been available since 2002. NutKing is accessible at <http://itr.itc.it>. NutKing supports high user interactivity, exploiting intelligent query refinement and products scoring, learning preferences from past user interactions (collaborative filtering). A plan for economic exploitation of the technology is underway, and a new company is going to be established as a spin off. Budget 1.9 Meuro.

I participated to the preparation of the project proposal and coordinated the ITC-irst unit as principal investigator.

*Harmonise* - <http://www.harmonise.org> - IST-2000-29329 (July 2001 to July 2003)

Although standardisation initiatives (based on XML) have a long history in the field of tourism, with different levels of adoption and usage, the intended broad harmonisation of electronic markets has never been reached, due to the lack of flexibility and extensibility.

Harmonise set up a co-ordinated initiative at European level, which has brought:

- Support a consensus process of the main European key actors, that composes an enlarged task force on Tourism Standards and interoperability;
- Identification of a minimal set of concepts as a starting point for a mediating tourism reference model;
- A software tool, based on ontology and semantic web technologies, that supports a reconciliation process that allows the different partners to keep their specific ontology, data structure and formats, and at the same time carry out an effective interaction among them.

Our laboratory is the co-ordinating partner . The other partners are: IFITT (A), EC3 (A), Link (P), ICEP (P), T6

(I), CNR (I). Budget 1.9Meuro. ITC-irst budget was 338.891 Euro.

I supervised the work of the ITC-irst researchers involved in the project (two).

*TELEMEDICINE - (Nov. 97 to Jul. 98)*

R&D project in the area of Tele-Consulting in collaboration with the Trento hospital (Santa Chiara). The project was aimed at supporting Tele-Consultation by a variety of integrated computer software systems. The system functions include the schedule of a consultation between two doctors and the support for the actual tele-consultation by providing the necessary information including patient data (x-ray images, charts, etc.), and enabling voice communication. I was involved in the design and development of the Case-Based reasoning module aimed to support the diagnosis of skin cancer. Key Technologies: Case-Based Reasoning, Machine Learning, web architectures.

My role was to design the case-based reasoning component dedicated to skin cancer diagnosis.

*CBET - (Jan.-97 to Jul. 98)*

CBET (Case Base Exploration System) is a C++ library developed as follow up of a previous Esprit project (CARICA). I was the leader of this project. CBET is devoted to the interactive exploration of a case base. CBET is endowed with a GUI (Tcl/Tk) that provides a range of browsing and display functions. CBET makes possible knowledge extraction and data mining from a set of cases. In CBET well rooted Machine Learning techniques for selecting relevant features, clustering cases and forecasting unknown values have been adapted and reused for case base exploration. Key Technologies: Statistics, Case-Based Reasoning.

I was the principal investigator and main developer of the learning algorithms.

*CARICA - (Sep.-95 to Sep.-96)*

I've participated to the EspritIV project n. 20401 CARICA (Cases Acquisition and Reply In fire Campaigns Ambience). The main objective of CARICA was to evaluate the suitability of case-based reasoning technology introduced in a previous Esprit project (CHARADE). The result is a system dedicated to operational firemen centres to support them to record their forest fire interventions, to debrief them and to query that data. I've written the proposal, designed and developed the subsystem dedicated to case base browsing, case retrieval, feature selection, clustering and plotting. The system has been developed in LISP, Tcl/Tk, Oracle, Spoke on a Sun UNIX machine. Key Technologies: GIS, Case-Based Reasoning, Statistics.

I participated to the preparation of the project proposal and developed the component devoted to case browsing, case retrieval, feature selection, case clustering and graphic display of clusters.

*CHARADE - (Jul.-92 to Jun.-95)*

I've been technical co-ordinator of the EspritIII project n. 6095 CHARADE. The aim of the CHARADE project was to set up a development platform, based on a modular architecture and on powerful programming paradigms. That platform has allowed the integration of different knowledge and reasoning models in supporting individuals and organisations to manage complex real life situations. On the top of this platform we have developed a Decision Support System for planning and control in forest fire emergencies. In IRST we have developed the Intervention Planning module that is based on advanced AI based techniques for Case Based Reasoning and Temporal Reasoning. The functions of this module are mainly related to the planning and scheduling of resources for fire fighting. The demonstrator runs on a Sun spark machine and uses the Informix DBMS, the URIAH Geographic Information System, the SPOKE object oriented language, the LISP language and the C++ language. The software project was conducted using an Object Oriented methodology (Booch). In IRST I managed a group of four people and the whole team of the CHARADE project was about 13 people. Key Technologies: GIS, Case-Based Reasoning, Statistics, Constraint Based Reasoning, Planning, Scheduling, Temporal Reasoning, Simulation.

I prepared the project proposal and coordinated the whole project as principal scientific investigator.

*POMI - (Jan. 90 to Dec. 91)*

We have developed an expert system for integrated pest management in apple orchards (project leader). Help to the agricultural producer is provided in classifying the producer damage observations. Furthermore, an interactive abduction module suggests explanations of those observations. Classification has been implemented with the aid of discrimination net techniques. The abduction module, which I developed, exploits the parsimonious covering theory by Peng and Reggia. The system has been implemented in KEE and runs on a Sun machine. We have also ported the system on a PC (Visual C++) and extended some functions to plan the chemical treatments. Key Technologies: Expert Systems, Diagnosis.

I designed and developed the abductive reasoning module using the “parsimonious covering theory”.

*COOL - (Jan. 89 to Jul. 90)*

I have developed, with the help of two people, a constraint object-oriented language (COOL) on the top of an object system (KEE, CLOS). In this language constraints are arranged in a hierarchy and they represent prototypes of constraint-arcs, which are defined intensionally by a simple assertional language. Pre-processing techniques are exploited and a variety of algorithms are used to find solutions both inferred and allowed by the constraint-arcs. The system runs on a UNIX machine. Key Technologies: Object Oriented Programming, Constraint Based Reasoning.

I was the principal investigator.

*Group Scheduling - (Jan. 88 to Dec. 88)*

I have developed a scheduling system for group work in the office. It is based on constraint techniques. Alternative solutions of the scheduling problem are maintained with the aid of the KEE Worlds system that is based on Truth Maintenance methodologies. Key Technologies: Truth Maintenance Systems, Expert Systems, Object Oriented Programming.

I was the principal investigator.

## Teaching Experience

- **University of Girona (Spain) – Computer Science Department:** I will teach (June 2006) a 20 hours course on Recommender systems, for PhD Students. The course has been selected and financed by the Spanish Ministry of Education, under a mobility grant, to invite outstanding researchers/professors from foreign countries.
- **University of Lecce, Institute for Advanced Interdisciplinary Studies.** “Innovative research projects in Information Technology and Tourism”. Topics: eTourism Market, Personalization in Web Applications, Recommender Systems, Mobile systems, Technology Exploitation. 16 Hours at the Master Level. February 2005.
- **University of Trento, Faculty of Engineering.** “Knowledge Engineering and Expert Systems”, at the undergraduate level for the “Corso di diploma in Ingegneria Informatica ed Automatica”(as “professore a contratto”). Topics: introduction to AI, Expert Systems, LISP, Search Problems, Rule Based Systems, Frames and OOP, Prolog, Case studies. 60 h lessons plus student assistance and examinations (student projects, written test and oral examination). I did this course for two academic years: 1994-95 and 1995-96.
- **Telecom Italia.** Coordination of a course on “Application Architectures and Object Oriented Programming” at the Telecom Italia “Competence Centre on Software Architectures and Reusability”. The major themes were: Object Oriented Programming and Integrated Development Environments, OO

Analysis and Design with UML, Software Architectures, Web Tools. I have personally taught 50 h on: Java, CORBA, Java 2 Enterprise Edition Architecture (Enterprise Java Beans, Servlet, Java-Server Pages). Students were mostly graduate with a significant experience in OO methodologies and software architectures. 2000.

- **International Institute for Advanced Scientific Studies (IIASS), Vietri sul Mare.** “Advanced programming languages: LISP”, for master program “Tecnologie Avanzate dell’Informazione e della Comunicazione”. I taught 40 h plus written examination. May 1995.
- **European Social Fund.** Perugia. Specialization course on IT. I taught 16 h on Constraint Based Reasoning and Truth Maintenance Systems. 1990.
- **Scuola Normale Superiore.** Assistance (exercitations) for a course on Calculus at the undergraduate level. 1986.

### **Master Thesis Advisor**

- Michele Giovannini: Progettazione e realizzazione di un’interfaccia di un sistema di supporto alle decisioni per la gestione delle coltivazioni del melo. Università di Trento, Facoltà di Ingegneria, 1996-97
- Luca Senter: Accoppiamento inesatto di alberi e ragionamento basato su casi. Università di Padova, Facoltà di Ingegneria, 1996-1997.
- Michela Cazzani: Metriche di similarità eterogenee per il problema di recupero nei sistemi di ragionamento basato su casi: studio sperimentale. Università di Milano, Corso di Laurea in Scienze dell’Informazione. 1997-98
- Rene Wietsma, University of Twente (Netherlands) (ongoing thesis, 2005)
- Luigi Patil, University of Trento. Tutor of a 3 months stage at eCTRL (web services and recommender systems). April – July 2004.

### **PhD Advisor**

- Nguyen Nhat Quang: Interactivity and Decision Making for On-Tour Travel Recommendation Systems. The International Graduate School University of Trento (ongoing thesis 2005).
- Shlomo Berkovsky, University of Haifa (Israel), (ongoing thesis 2005)
- Tariq Mahmood, University of Trento (ongoing Thesis 2005)

### **PostDoc Tutor**

- Fabio Del Missier: Information Display and Recommender Systems.

### **Awards**

- Best paper award at “Information and Communication Technologies in Tourism” Enter 2001 Conference, Montreal, April 2001.
- Best degree award, University of Padova, in 1984.

### **Current and Recent Activities**

I have **taught** a number of short courses and invited seminars on artificial intelligence and eCommerce at university departments and research institutes (Univ. of Milano, Univ. of Kaiserslautern, Naval Research Laboratories – Washington D.C., Area Ricerca Trieste, Univ. of Torino, University of Surrey, University of Trento) and industries (Telecom Italia, Alenia, Thomson, Alcatel, Algotech).

I’ve been the **organiser** of:

- First Italian Workshop on Case-Based Reasoning, held in Trento on 20-21 February 1998. (co-chair)
- eCTRL Workshop on User Modelling and Decision Making in Travel and Tourism Emergent Systems, Trento, April 9th-10th 2002.(co-chair)

- RPEC'02: Workshop on Recommendation and Personalization in eCommerce, in conjunction with Adaptive Hypermedia AH2002, May 28th 2002, Malaga, Spain. (co-chair)
- Advances on Recommender Systems, Workshop, in conjunction with BISFAI'05, Haifa, Israel, June 27, 2005, (chair)
- International Conference on Case-Based Reasoning (ICCBR 2005), Chicago USA (co-chair).
- International Conference on Information and Communication Technologies in Tourism - ENTER 2005, Innsbruck, Austria, 26-28 January 2005 (co-chair).
- 17th European Conference on Artificial Intelligence – Workshop on Recommender Systems, August 28, Riva del Garda, Italy. (organizer).
- 17th European Conference on Artificial Intelligence – Workshop on Experiential Reasoning, August 29, Riva del Garda, Italy. (co-chair).
- Minitrack on Recommender Systems, Fortieth Annual Hawai'i International Conference on System Sciences, January 3 - 6, 2007, Waikoloa, Hawaii. (co-chair).

I've been in the **program committee** of :

- European Conference on Artificial Intelligence-96 (August 11-16, 1996, Budapest, Hungary)
- European Conference on Machine Learning 97 Workshop "Case-Based Learning: Beyond Classification of Feature Vectors" (26 April 1997, Prague, Czech Republic)
- American Association for Artificial Intelligence-98 Workshop on "Case-Based Reasoning Integrations"
- International Conference on Case-Based Reasoning ICCBR'99 (Munich July 1999).
- European Workshop on Case-Based Reasoning 2000 (September 2000, Trento)
- International Conference on Case-Based Reasoning ICCBR2001 (August 2001, Vancouver).
- First Italian Conference on Innovation and Technologies for Tourism (Trento 22-23/11/2001).
- International Conference on Information and Communication Technologies in Tourism - ENTER 2002 (Innsbruck).
- Second Italian Conference on Innovation and Technologies for Tourism (Venice 5-6/12/2002).
- International Conference on Information and Communication Technologies in Tourism - ENTER 2003 (Helsinki, FI).
- International Conference on Case-Based Reasoning ICCBR2003 (June 23 - 26, 2003 in Trondheim, Norway).
- m>Business 2003, The Second International Conference on Mobile Business, (June 23-24, 2003, Vienna, Austria).
- The Twentieth International Conference on Machine Learning (ICML-2003), August 21-24, 2003, Washington, DC USA.
- IJCAI Workshop on Intelligent Techniques for Web Personalization, (ITWP '03), August 11 2003, Acapulco, Mexico.
- Workshop on Mixed-Initiative Case-Based Reasoning, (June 24, 2003 in Trondheim, Norway).
- Third Italian Conference on Innovation and Technologies for Tourism (Milano December 2003).
- International Conference on Information and Communication Technologies in Tourism - ENTER 2004 (II Cairo, Egypt).
- 7-th European Conference in Case-Based Reasoning, 30th August through 2nd September 2004, Madrid, Spain.
- m>Business 2004, Third Annual Conference, July 12-13, 2004, New York City.
- Fourth Italian Conference on Innovation and Technologies for Tourism (Assisi December 2004).
- XVII Brazilian Symposium on Artificial Intelligence - SBIA'04. September 29 - October 1, 2004, São Luís, Maranhão – Brazil.
- International Conferences on Mobile Government, Euro mGov 2005, July 10-12 2005, Sussex University, Brighton, UK.
- IJCAI Workshop on Intelligent Techniques in Web Personalisation, (ITWP '05), August 1 2005, Edinburgh,

Scotland.

- Fifth Italian Conference on Innovation and Technologies for Tourism (Venice 1-2 December 2005).
- International Conference on Information and Communication Technologies in Tourism - ENTER 2006, 17 – 20 January, Lausanne, Switzerland.
- Sixth International Workshop on Next Generation Information Technologies and Systems (NGITS 2006), July , 2006, Israel.
- Intelligent Techniques for Web Personalization, held in conjunction with the 21st National Conference on Artificial Intelligence - AAAI 2006, July 16–20, 2006, Boston, Massachusetts
- 17th European Conference on Artificial Intelligence – Workshop on Ubiquitous User Modelling, August 29, Riva del Garda, Italy. (co-chair).
- Second European Conference on Mobile Government, University of Sussex, Brighton, UK, 30-31 August & 1 September 2006
- VIII Argentine Symposium on Artificial Intelligence 4-5 September 2006 - Mendoza, Argentina.
- 8-th European Conference in Case-Based Reasoning, 4-7 September 2006, Ölüdeniz/Fethiye, Turkey.
- European Conference on Machine Learning and European Conference on Principles and Practice of Knowledge Discovery in Databases, September 18-22, 2006, Berlin, Germany.
- ECML PKDD 2006 Workshop on Ubiquitous Knowledge Discovery for users (UKDU'06), September 22, 2006, Berlin, Germany.
- Giornata nazionale su Guide Mobili Virtuali, 18 October 2006, Torino.
- ENTER 2007, Connecting Destinations New Technologies, New Thinking, New Solutions, January 24th – 26th, 2007, Ljubljana, Slovenia.
- The Twenty-Second National Conference on Artificial Intelligence, AAAI-07, July 22–26, 2007, Vancouver, British Columbia, Canada.

I'm in the **editorial board** of Information Technology and Tourism Journal and I've recently editing a special issue dedicated to Travel Recommender Systems (itt.ec3.at).

I'm editing (Winter 2005/2006) a special issue on Recommender Systems for the International Journal of Electronic Commerce (with H. Werthner).

I've been acting as **reviewer** for

- IEEE Transactions of Pattern Analysis and Machine intelligence
- IEEE transaction on Data and Knowledge Engineering
- Information Technology and Tourism Journal
- AI Review Journal
- Computer Journal.
- ACM Transaction on Information Systems
- Machine Learning Journal
- Data & Knowledge Engineering (DKE) Journal
- Interacting with Computers
- International Journal of Electronic Commerce
- User Modeling and User-Adapted Interaction

I've been **visiting scientist** at Navy Center for Applied Research in Artificial Intelligence, Naval Research Laboratory (Washington DC) from Oct. 96 to Dec. 96. I worked on local algorithms for automatic classification (machine learning) in the Case-Based Reasoning group with D.W.Aha.

I've been **Research Associate** of National Laboratory for Tourism and eCommerce, University of Illinois at Urbana Champaign, and now I'm **Senior Research Fellow** of National Laboratory for Tourism and eCommerce, University of Temple, Philadelphia (USA).

I've been recently **invited to give talks** at the following conferences/events:

- E-Commerce and Tourism: Perspective and Challenges, at the VI International Forum on Tourism in

Benidorm – November 9th, 2001

- Personalizzare la navigazione: un'esperienza virtuale o un vantaggio reale?, at the First Italian Conference on Innovation and Technologies for Tourism (Trento 22-23/11/2001).
- Complex products and recommender systems. ICT, globalization and localisms, AICA Conference (Conversano, Italy, 25-27 September 2002).
- Consumer Interactions in Tourism, as a Foundation Class at the International Conference on Information and Communication Technologies in Tourism - ENTER 2003 (Helsinki, Finland, 29th - 31st January 2003).
- Case Based Reasoning and Recommender Systems in Tourism. 2nd eTourism Futures Forum (University of Surrey, Guildford, 31st March and 1st of April, 2003)
- On-the-move Travel Decision Aid. ENTER 2004 (Il Cairo, Egypt, 24-28 January 2004).
- Pre-travel and on-the move integration, in travel decision aid. 3rd eTourism Futures Forum (University of Surrey, Guildford, 29-30 March, 2004)
- Case-Based Travel Recommendations. University of Bolzano/Bozen, 23 August, 2004.
- Striving for IT excellence in IT and Tourism, IFITT Workshop on Research Methodologies, Vienna University of Economics and Business Administrations, Vienna, Austria, 17 September 2004.
- Recommender Systems and the Travel Advisory Decision Problem, at the ECCA – Etourism Competence Center Austria, Innsbruck, July 7 2005.
- Recommender Systems: Introduction and Research Issues, 2K\* Symposium, Trento, 5-7 September, 2005.
- Interactive Recommender Systems, Informatics Colloquium, University of Klagenfurt, October 21<sup>st</sup>, 2005.

### **Other Professional activities**

- Scientific reviewer of the Humboldt Foundation, Bonn, Germany, Jan. 2005.
- Consultant of the University of Surrey, UK (prof. Panos Louvieris) on the DTC 9.1 project, as expert of Case-Based Reasoning technologies.
- Consultant of Informatica Trentina (I) for preparing a feasibility study for an innovative Destination Management System based on recommendation technology, Service Oriented Architecture, and Open Software.
- Consultant of Regione Veneto for the design of the regional strategic plan for IT and Tourism;
- Consultant of Provincia Autonoma of Trento for the evaluation of industrial research project submitted under regional law 6.
- Consultant of CISA (I) for a constraint reasoning system to solve combinatorial problems in keys manufacturing.
- Consultant of SGS (I) for designing a workflow management system.

### **Research interests**

- Recommender Systems: collaborative filtering, decision modelling, products bundling.
- E-Tourism: destination management systems, tourist web portals, service integration, consumer behaviour modelling
- Case-Based Reasoning: case retrieval, similarity metrics, structured cases representation and retrieval.
- Machine learning: error correcting output codes, local metrics for the nearest neighbor classifier, probability based metrics.
- Data Mining: applications to fraud detection, hierarchical clustering.
- Constraint Satisfaction Problems: stochastic algorithms, temporal reasoning, constraints solving and learning, applications to manufacturing.
- Decision Support Systems: applications to natural resource management and travel and tourism.
- Object Oriented Programming and Software Engineering: constraints languages, software architectures,

distributed systems.

I'm currently focussing on the following research topics:

- **Case-based recommender systems:** I'm studying a range of approaches to exploit the case-based problem solving methodology in the design of hybrid recommender systems: for product ranking, for product bundling, for supporting multiple decision styles, for driving conversational decision support systems.
- **Similarity computation for structured objects:** I'm studying the problem of the design of effective similarity metrics for semi-structured objects, for instance XML documents. This topic is at the base of the design of complex product recommender systems but also it is relevant for the new area of Mining complex data such as Graphs, Trees and Sequences.
- **Interactive query management and data mining:** I'm interested in building cooperative systems that help the user to rewrite the query to a data repository when failures occur (such as void or too large result sets). The research is aimed at merging more classical results that can be obtained from statistics or data mining technology with user modelling. The goal is to suggest query changes that are both effective in solving the problem and fit the user preferences model built by the system during the human/computer interaction.
- **Mobile recommender systems:** I'm particularly concerned with the integration of pre-travel services with on-the move ones. The goal is to support the full travel life cycle and to develop special decision support methodologies that satisfy the specific behavioural and technical constraints of the mobile context.

### Hardware/Software Experience

Languages, etc.: C, C++, Java, Basic, Lisp, Clos, Kee, (all of these at a very advanced level), Prolog, CLP(R), Dbase3, Lotus123, SQL, AS (basic knowledge).

OS: VM, DOS, UNIX, Mac, Windows NT4, Windows 2000.

Machines: IBM 3090, PC, Macintosh, SUN Sparc, ExplorerII, HP Workstations

Sw Tools: MS Word, MS Excel, MS Project, Cool:Jex, OrbixWeb, Bea Tuxedo, Together Control Center, JBuilder.

### Referees

- Hannes Werthner, Department of Computer Science and Telecommunications University of Trento, Via Sommarive 14, 38050 Povo Trento. Phone +39 0461 881571 werthner@dit.unitn.it
- Dr. David W. Aha, Navy Center for Applied Research in AI, Naval Research Laboratory, Code 5510, 4555 Overlook Avenue, SW, Washington, DC 20375-5337, USA - aha@AIC.NRL.Navy.Mil
- Karl Wöber, , Institute for Tourism and Leisure Studies, Vienna University of Econ. and Bus. Ad., Augasse 2-6, A-1090 Vienna, Austria, Phone +43 -1- 313364470, woeber@isis.wu-wien.ac.at
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## Publications

### Edited Books and Journals

1. Hector Munoz-Avila and Francesco Ricci. Case-Based Reasoning Research and Development. 6th International Conference on Case-Based Reasoning, ICCBR 2005, Chicago, IL, USA, August 23-26, 2005, Proceedings. Series: Lecture Notes in Computer Science. Subseries: Lecture Notes in Artificial Intelligence, Vol. 3620. 2005, XV, 654 p., ISBN: 3-540-28174-6
2. Francesco Ricci and Joaquin Delgado (eds), Special Issue of Information Technology and Tourism, dedicated to "Travel Recommender Systems", Volume 6, Number 3, 2004. Pages 155-227. Cognizant Communication Corporation.
3. Francesco Ricci and Barry Smyth (editors), Recommendation and Personalization in eCommerce, RPEC'02, Proceedings of the Workshop at AH2002, University of Malaga Press, 2002.
4. F. Ricci (editor), "User Modelling and Decision Making in Travel and Tourism Emergent Systems", in Proceedings of the eCTRL Workshop, Trento, Italy, April 11-12, 2002.

### Journal Publications

5. Francesco Ricci and Quang Nhat Nguyen, Critique-Based Mobile Recommender Systems, ÖGAI Journal, Volume 24, Number 4, ÖGAI Press, 2005.
6. Hannes Werthner and Francesco Ricci. Electronic commerce and tourism. Communication of ACM, Volume 47, Number 12, 101-105. 2004.
7. Francesco Ricci. Travel Recommender Systems, IEEE Intelligent Systems, November/December, 55-47, 2002.
8. Francesco Ricci and Hannes Werthner. Case base querying for travel planning recommendation, Information Technology and Tourism, 3(3/4), 215-226, 2002.
9. Paolo Avesani, Anna Perini and Francesco Ricci. Interactive case-based planning for forest fire management, Applied Intelligence, 13, 41-57, 2000.
10. Francesco Ricci and Paolo Avesani. Data Compression and Local Metrics for Nearest Neighbor Classification, IEEE Trans. In Pattern Analysis and Machine Intelligence, 21(4), 380-384, 1999.
11. Francesco Ricci, Paolo Avesani and Anna Perini. Cases on Fire: Applying CBR to Emergency, New Review of Applied Expert Systems, 5, 175-190, 1999.
12. Francesco Ricci and Paolo Avesani. Apprendimento di metriche di similarita' locali ed applicazione alla gestione degli incendi boschivi. Bollettino dell'AI\*IA, 9(3), 21-25, 1996.
13. Francesco Ricci. Constraint reasoning with learning automata. International Journal of Intelligent Systems, 9, 1059-1082, 1994.
14. Alfonso Gerevini, Anna Perini, Francesco Ricci, Diego Forti, Claudio Ioriatti, Luisa Mattedi, and Ambrogio Monetti. POMI: An expert system for integrated pest management of apple orchards. AI Applications, 6(3), 51-62, 1992.
15. Francesco Ricci. Constraint networks. Note di Software, (47), 3-14, 1990.
16. Francesco Ricci. Ragionamento guidato da vincoli. Bollettino AIIA, 3(4), 53-59, 1990.
17. Francesco Ricci. Vector bundle valued forms and the laplace-beltrami operator. Rendiconti Sem. Mat. Univ. Padova, 1986.

## Papers in Books

18. Fabiana Lorenzi and Francesco Ricci, Case-Based Recommender Systems: a Unifying View, in Bamshad Mobasher and Sarabjot Anand (eds.), *Intelligent Techniques for Web Personalization*, Pages 89-113, Springer Verlag, 2005.
19. Francesco Ricci, Dario Cavada, Nader Mirzadeh, Adriano Venturini, Case-Based Travel Recommendations. In Daniel R. Fesenmaier, Hannes Werthner and Karl Wöber (editors), *Travel Destination Recommendation Systems: Behavioral Foundations and Applications*, CAB Publishing, in press.
20. Francesco Ricci, Daniel R. Fesenmaier, Nader Mirzadeh, Hildegard Rumetshofer, Erwin Schaumlechner, Adriano Venturini, Karl Wöber and Andreas Zins, DIETORECS: a Case-Based Travel Advisory System. In Daniel R. Fesenmaier, Hannes Werthner and Karl Wöber (editors), *Travel Destination Recommendation Systems: Behavioral Foundations and Applications*, CAB Publishing, in press.
21. Francesco Ricci and Quang Nhat Nguyen, MobyRek: A Conversational Recommender System for On-the-move Travelers. In Daniel R. Fesenmaier, Hannes Werthner and Karl Wöber (editors), *Travel Destination Recommendation Systems: Behavioral Foundations and Applications*, CAB Publishing, in press.
22. Fabiana Lorenzi and Francesco Ricci, Case-Based Recommender Systems, in J.Wang (ed.), *The Encyclopedia of Data Warehousing and Mining*, Idea Group Publishing, 124-128, 2005.
23. Ricci, F. and Del Missier, F. Supporting Travel Decision Making through Personalized Recommendation, in Clare-Marie Karat, Jan Blom, and John Karat (eds.), *Designing Personalized User Experiences for eCommerce*, 231-251, Kluwer 2004.
24. Claudia Danzinger, Francesco Ricci and Hannes Werthner. e-Commerce e turismo: quali prospettive?. In Harald Pechlaner and Mara Manente (editors), "Manuale del Turismo Montano", Touring Club Italiano, Milano, 2002.
25. Anna Perini and Francesco Ricci. An interactive planning architecture. in "New Directions in AI Planning", IOS Press 1996.
26. Cecilia Nubola, Francesco Ricci, and Angelo Turchini. Visite pastorali e computer: un bilancio e un progetto. In C. Nubola and A. Turchini, editors, *Visite pastorali ed elaborazione dei dati. Esperienze e metodi*, 433-448. Il Mulino, Bologna, Italy, 1993.

## Conference Publications

27. Shlomo Berkovsky, Lora Aroyo, Dominik Heckmann, Geert-Jan Houben, Alexander Kröner, Tsvi Kuflik, Francesco Ricci, Predicting User Experiences through Cross-Context Reasoning, *Proceedings of 4th Workshop on Adaptivity and User Modeling in Interactive Systems, ABIS 06*, 9-11 October, Hildesheim, Germany.
28. Pavel Bekkerman, Sarit Kraus and Francesco Ricci, Applying cooperative negotiation methodology to group recommendation problem, *ECAI Workshop on Recommender systems, Riva del Garda, August 28-29. 2006*.
29. Francesco Ricci and Tariq Mahmood, Learning and Adaptivity in Interactive Recommender Systems, *ECAI Workshop on Recommender systems, Riva del Garda, August 28-29. 2006*.
30. Adriano Venturini and Francesco Ricci, Applying Trip@dvice Recommendation Technology to *www.visiteurope.com*, *4th Prestigious Applications of Intelligent Systems (PAIS-2006)*, The 17th European Conference on Artificial Intelligence, Riva del Garda, Italy / Aug 28th - Sept 1st, 2006.
31. Shlomo Berkovsky , Dan Goldwasser, Tsvi Kuflik and Francesco Ricci, Identifying Inter-Domain Similarities through Content-Based Analysis of Hierarchical Web-Directories, *The 17th European Conference on Artificial Intelligence, Riva del Garda, Italy / Aug 28th - Sept 1st, 2006*.

32. Shlomo Berkovsky, Tsvi Kuflik, Francesco Ricci, Enhancing Privacy while Preserving Accuracy of the Collaborative Filtering, ECAI Workshop on Recommender systems, Riva del Garda, August 28-29. 2006.
33. Shlomo Berkovsky, Tsvi Kuflik, Francesco Ricci, "Cross-Technique *Mediation of User Models*", in proceedings of the International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems, Dublin, Ireland, June 2006.
34. Shlomo Berkovsky, Yaniv Eytani, Tsvi Kuflik, and Francesco Ricci. Hierarchical neighborhood topology for privacy enhanced collaborative filtering. In CHI 2006 Workshop on Privacy-Enhanced Personalization, Montreal, April 22 2006.
35. Francesco Ricci and René T. A. Wietsma, Product Reviews in Travel Decision Making, Information and Communication Technologies in Tourism 2006, Pages 296-307, Proceedings of the International Conference in Lausanne, Switzerland, 2006. Springer Verlag.
36. Shlomo Berkovsky, Tsvi Kuflik and Francesco Ricci, Entertainment Personalization Mechanism Through Cross-Domain User Modeling, in Intelligent Technologies for Interactive Entertainment: First International Conference, INTETAIN 2005, pp. 215 – 219, Madonna di Campiglio, Italy, November 30 – December 2, 2005. Springer-Verlag.
37. Shlomo Berkovsky, Tsvi Kuflik, Francesco Ricci, "P2P Case Retrieval with an Unspecified Ontology", in proceedings of the International Conference on Case-Based Reasoning (ICCBR), Page 91-105, Chicago, IL, August 2005. Springer Verlag.
38. Shlomo Berkovsky, Paolo Busetta, Yaniv Eytani, Tsvi Kuflik, Francesco Ricci, "Collaborative Filtering over Distributed Environment", in proceedings of the Workshop on Decentralized, Agent-Based and Social Approaches to User Modeling, in conjunction with the International Conference on User Modeling (UM), Pages 1-10, Edinburgh, UK, July 2005.
39. Shlomo Berkovsky, Yaniv Eytani, Tsvi Kuflik, Francesco Ricci, "Privacy-Enhanced Collaborative Filtering", in proceedings of the Workshop on Privacy-Enhanced Personalization, in conjunction with the International Conference on User Modeling (UM), Pages 75-83, Edinburgh, UK, July 24-29, 2005.
40. Renè T.A. Wietsma, Francesco Ricci, Product Reviews in Mobile Decision Aid Systems. Workshop on Pervasive Mobile Interaction Devices (PERMID 2005), in conjunction with Pervasive 2005. May 11<sup>th</sup> 2005, Munich, Germany. <http://www.medien.ifi.lmu.de/permid2005/>
41. Nader Mirzadeh, Francesco Ricci, and Mukesh Bansal, Feature Selection Methods for Conversational Recommender Systems, in Proceedings of IEEE International Conference on e-Technology, e-Commerce and e-Services, Pages 772-777, Hong Kong, 29 March – 1 April, 2005. IEEE Press.
42. Ulrich Rabanser and Francesco Ricci, Recommender systems: Do they have a viable business model in e-tourism?, Information and Communication Technologies in Tourism 2005, Proceedings of the International Conference, Innsbruck, Austria, January 26-28 2005. Pages 160-171. Springer Wien New York.
43. Francesco Ricci, Karl Wöber, and Andreas Zins, Recommendations by Collaborative Browsing, Information and Communication Technologies in Tourism 2005, Proceedings of the International Conference, Innsbruck, Austria, January 26-28 2005. Pages 172-182. Springer Wien New York.
44. Nguyen Q.N., Ricci F., Cavada D., User Preferences Initialization and Integration in CritiqueBased Mobile Recommender Systems, in Artificial Intelligence in Mobile Systems 2004, Pages 71-78, In conjunction with UbiComp 2004, Tuesday, September 7, Nottingham, UK.
45. Nguyen Q.N., Ricci F., Cavada D., Critique-based Recommendations for Mobile Users: GUI Design and Evaluation, in 3rd Workshop on "HCI in Mobile Guides", in conjunction with 6th International Conference on Human Computer Interaction with Mobile Devices and Services (MobileHCI 04), University of Strathclyde, Glasgow, Scotland, 13 to 16 September 2004.

46. Mirzadeh N., Ricci F. and Bansal M., Supporting User Query Relaxation in a Recommender System, in Proceedings of the 5th International Conference on Electronic Commerce and Web Technologies [EC-Web '04], Zaragoza, Spain, 30 August - 3 September, 2004.
47. Lorenzi F., Abel M., Ricci F., SISAIH: a Case-Based Reasoning Tool for Hospital Admission Authorization Management, in Proceedings of Workshop on CBR in the Health Sciences, at The Seventh European Conference on Case-Based Reasoning [ECCBR-04] Madrid, Spain, August 31, 2004.
48. Nguyen Q.N., Cavada D., Ricci F. , On-Tour Interactive Travel Recommendations, in Proceedings of the 11th International Conference on Information and Communication Technologies in Travel & Tourism [ENTER 2004], Cairo, Egypt, January 26 - 28, 2004.
49. Zins A. H., Bauernfeind U., Del Missier F., Mitsche N., Ricci F., Rumetshofer H., Schaumlechner E., Prototype testing for a destination recommender system: steps, procedures and implications, in Proceedings of the 11th International Conference on Information and Communication Technologies in Travel & Tourism [ENTER 2004], Cairo, Egypt, January 26 - 28, 2004.
50. Cavada D., Mirzadeh N., Ricci F., Venturini A., Interactive itinerary planning with trip@dvice, in Proceedings of the Ninth IFIP TC13 International Conference on Human-Computer Interaction, Zurich, Switzerland, September 1-5, 2003.
51. F. Ricci, A. Venturini, D. Cavada, N. Mirzadeh, D. Blaas and M. Nones, Product Recommendation with Interactive Query Management and Twofold Similarity. In proceedings of the 5th International Conference on Case-Based Reasoning (ICCBR 2003). Trondheim, Norway, June 23 to 26, 2003.
52. Q. Nhat Nguyen, D. Cavada and F. Ricci, Trip@dvice Mobile Extension of a Case-Based Travel Recommender System. In Proceedings of the Second International Conference on Mobile Business, 23/24 June 2003, Vienna, Austria.
53. D. Cavada, N. Mirzadeh, F. Ricci and A. Venturini. Interactive Itinerary Planning with Trip@dvice. In proceedings of the Ninth IFIP TC13 International Conference on Human-Computer Interaction, September 1-5, 2003 - Zürich, Switzerland.
54. F. Del Missier and F. Ricci. Understanding Recommender Systems: Experimental Evaluation Challenges, in proceedings of Workshop on Empirical Evaluation of Adaptive Systems, in conjunction with UM 2003, Pittsburg, June 22, 2003.
55. F. Ricci and F. Del Missier. Personalized Product Recommendation through Interactive Query Management and Case-Based Reasoning, presented at CHI 2003 Workshop on Designing Personalized User Experiences for eCommerce: Theory, Methods, and Research, Fort Lauderdale, 6-7 April, 2003.
56. D. R. Fesenmaier, F. Ricci, E. Schaumlechner, K. Wöber, and C. Zanella, DIETORECS: Travel Advisory for Multiple Decision Styles, in Proceedings of Enter conference, Helsinki, Finland, 29th - 31st January, 2003.
57. O. Fodor, M. Dell'Erba, F. Ricci, H. Werthner, "Harmonise: a solution for data interoperability", in Towards the Knowledge Society, Proceedings of the 2nd IFIP Conf.on E-Commerce, E-Business & E-Government, Pages 433-445, Lisbon, Portugal, October 7-9, 2002, Kluwer, 2003.
58. B. Arslan, F. Ricci, N. Mirzadeh, A. Venturini, "A dynamic approach to feature weighting", in Proceedings of Data Mining 2002 Conference, Bologna, Italy, September 25-27, 2002.
59. F. Ricci and D. Cavada, Q. Nhat Nguyen, "Integrating Travel Planning and On-Tour Support in a Case-Based Recommender System", in Workshop on Mobile Tourism Support Systems (in conjunction with Mobile HCI '02), Pisa, Italy, September 17, 2002.
60. F. Ricci, N. Mirzadeh and A. Venturini. Intelligent query management in a mediator architecture, IEEE International Symposium 'Intelligent Systems', Sunny Day, Bulgaria, September 10-12, 2002.
61. F. Ricci, B. Arslan, N. Mirzadeh, A. Venturini, "ITR: a case-based travel advisory system", in Proceeding

- of ECCBR, 6th European Conference on Case Based Reasoning, Aberdeen, Scotland, September 4-7, 2002.
62. O. Fodor, M. Dell'Erba, F. Ricci, A. Spada, H. Werthner, "Conceptual normalisation of XML data for interoperability in tourism", in Proceedings of the Workshop on Knowledge Transformation for the Semantic Web, KTSW 2002, Lyon, France, July 23, 2002.
  63. B. Arslan and F. Ricci. Case-based session modelling in a travel advisory system. RPEC'02: Workshop on Recommendation and Personalization in eCommerce, in conjunction with Adaptive Hypermedia AH2002, Malaga, Spain, May 28th 2002.
  64. B. Arslan, F. Ricci, A. Venturini, "Modelling Travel Recommendation Sessions in a Case-Based Reasoning Framework", in Proceedings of the eCTRL Workshop on User Modelling and Decision Making in Travel and Tourism Emergent Systems, Trento, Italy, April 11-12, 2002.
  65. F. Ricci, D. Blaas, N. Mirzadeh, A. Venturini and H. Werthner. Intelligent Query Management for Travel Products Selection. ENTER 2002 Conference, Innsbruck, Austria, January 22-25, pag. 448-457, 2002.
  66. A. Venturini, N. Mirzadeh, F. Ricci and H. Werthner. Support Interactive Query Refinement for a Travel Recommendation System. EuroWeb 2001 Conference, Pisa, December 18-20, 2001.
  67. F. Ricci, N. Mirzadeh, A. Venturini and H. Werthner, "Case-based reasoning and legacy data reuse for web based recommendation architectures", IIWAS 2001 Conference, Linz, Austria, September 10-12, 2001.
  68. Francesco Ricci and Hannes Werthner, Case-based destination recommendations over an XML data repository", ENTER2001 Conference, Montreal, Canada, April 24-27, 2001.
  69. Anna Perini, Francesco Ricci, Luca Senter, Crisis Planning in Complex Industrial Plants. Presented at AI\*IA Workshop Intelligenza Artificiale per l'ambiente, Bologna, Italy, September 17, 1999.
  70. Paolo Avesani, Enrico Blanzieri e Francesco Ricci. Advanced Metrics for Class-Driven Similarity Search. In Proceedings of International Workshop on Similarity Search (IWOSS'99), Florence, Italy, 1st and 2nd Sept. 1999
  71. Enrico Blanzieri and Francesco Ricci. Probability Based Metrics for nearest Neighbor Classification and Case-Based Reasoning. In Proceedings of the third International Conference on Case-Based Reasoning, Munich, August 1999.
  72. Enrico Blanzieri and Francesco Ricci. A Minimum Risk Metric for Nearest Neighbor Classification. Probability Based Metrics for nearest Neighbor Classification. In Proceedings of the Sixteenth International Conference on Machine Learning (ICML99), June 27-30, 1999 Bled, Slovenia.
  73. Francesco Ricci and Luca Senter. Structured cases, trees and efficient retrieval. In Proceedings of the fourth European Workshop on Case-Based reasoning, Dublin, Ireland, September 23-25, 1998.
  74. Paolo Avesani, Anna Perini and Francesco Ricci, The Twofold Integration of CBR in Decision Support Systems. Proceedings AAAI98 Workshop on Case-Based Reasoning Integrations, Madison, July 27, 1998.
  75. Francesco Ricci and David W. Aha. Error-Correcting Output Codes for Local Learners. In Proceedings of the 10th European Conference on Machine Learning, April 21-24 1998, Chemnitz, Germany.
  76. Francesco Ricci and Paolo Avesani. Data Compression and Local Metrics for Nearest Neighbor Classification and Case Based Reasoning. First Italian Workshop on Case-Based Reasoning, February 20-21 1998, Trento, Italy.
  77. Paolo Avesani and Anna Perini and Francesco Ricci. CBET: a case base exploration Tool. Fifth Congress of the Italian Association for Artificial Intelligence (AI\*IA 97), Roma (Italy), September 16-19, 1997
  78. A. Gerevini, A. Perini and F. Ricci. Incremental Algorithms for Managing Temporal Constraints. IEEE

International Conference on Tools with Artificial Intelligence (ICTAI'96), November, 1996

79. Ricci F., Avesani P. Exact Learning and Data Compression with a Local Asymmetrically Weighted Metric. ICML-96 Workshop on Learning in Context-Sensitive Domains, Bari, July 3rd, 1996.
80. Francesco Ricci and Paolo Avesani. Learning a local similarity metric for case-based reasoning. International Conference on Case-Based Reasoning (ICCBR-95), Sesimbra, Portugal, Oct. 23-26, 1995.
81. Anna Perini and Francesco Ricci. An interactive planning architecture. Third European Workshop on Planning, Assisi, Italy, September 27-29, 1995.
82. Anna Perini and Francesco Ricci. Constraint reasoning and interactive planning. In Workshop on Constraint Languages-Systems and their use in Problem Modelling. International Logic Programming Symposium, Ithaca, New York, November 18-19 1994.
83. Francesco Ricci, Anna Perini and Paolo Avesani. Building First Intervention Plans: the forest fire case. Presented at the Seventh Workshop on Artificial Intelligence Research in Environmental Science (AIRES'94), Biloxi, Mississippi, 14-17 November 1994, 1994.
84. Francesco Ricci and Anna Perini. Continuous domain constraints. In International Workshop on Constraint Processing in Computer-Aided Design, Lausanne, Switzerland, 1994.
85. Anna Perini and Francesco Ricci. Un progetto per lo sviluppo di un sistema knowledge-based per la protezione integrata nella coltura del melo. In Proceedings of the Annual Conference of the Associazione Italiana per il Calcolo Automatico - AICA, Palermo, 21-23 September 94, 1994.
86. Anna Perini, Francesco Ricci, and Paolo Avesani. Temporal reasoning and interactive planning. In Proceedings of the Workshop on Temporal Reasoning, AI\*IA, Parma, 28 September 94., 1994.
87. Paolo Avesani, Anna Perini, and Francesco Ricci. Combining CBR and constraint reasoning in planning forest fire fighting. In Proceedings of the first European workshop on Case-Based reasoning, pages 235--239, Kaiserslautern, 1993.
88. Francesco Ricci, Anna Perini, and Paolo Avesani. Planning in a complex real domain. In proceedings of the Italian planning workshop, pages 55--60, Rome, 1993.
89. Alfonso Gerevini, Anna Perini, and Francesco Ricci. A knowledge-based system for integrated pest management. In Twelfth International Conference Artificial Intelligence Expert Systems Natural Language, Avignon, France, 1992.
90. Francesco Ricci. Le strutture dell'artificiale. In I Sistemi Esperti per il successo d'impresa, Milano, Italy, 1991.
91. Alfonso Gerevini, Anna Perini, Francesco Ricci, Diego Forti, Claudio Ioriatti, Luisa Mattedi, and Ambrogio Monetti. POMI: An expert system for integrated pest management. In AAAI Workshop on AI in Natural and Agricultural Resource Management, July 1991, Anaheim, California.
92. Francesco Ricci. Equilibrium theory and constraint networks. International Conference on Game Theory, Florence, 1991.
93. Francesco Ricci. Equilibrium theory and constraint networks. In Constraint Directed Reasoning Workshop, AAAI-90, Boston 1990.
94. Paolo Avesani, Anna Perini, and Francesco Ricci. COOL: An object system with constraints. In Jean Bezivin, Bertrand Meyer, and Jean-Marc Nerson, editors, Technology of Object-Oriented Languages and Systems, pages 221--228, 1990. A shorter version presented at AAAI-90 workshop: Object-Oriented programming in AI.

#### **Technical Reports**

95. Ricci F., Cavada D., Nguyen N.Q. mITR-Mobile Tourism Recommender System, System Design, April

- 22, 2004, DocID: CA-MO-02
96. Venturini A., Dellerba M., Ricci F. Progetto "eCommerce e Turismo", Analisi preliminare per un sistema di gestione della destinazione turistica regionale. January 15, 2004, DocID: CA-PP-01.
  97. Cavada D., Nguyen N.Q., Del Missier F., Ricci F. mITR-UI Evaluation. August 6, 2003, DocID: CA-MO-03.
  98. Del Missier F., Ricci F., Zins A. D4.4 Experimental Evaluation Strategy. April 4, 2003, Ref.No.: 0304-13.
  99. Del Missier F., Ricci F., Nones M. Progetto "eCommerce e Turismo", Strategia di Valutazione di ITR (vers.1.1). January 30, 2003, DocID: CA-VA-01.
  100. Cavada D., Nguyen N.Q., Ricci F. Mobile Technology and Tourism Application - Technical Overview. August 1, 2002, Ref.No.: 0212-07.
  101. Ricci F., Arslan B., Mirzadeh N., Venturini V. D4.1 - Detailed Descriptions of CBR Methodologies. ITC-irst, Technical report, May 2002, 86 pp. Ref. No.: 0205-07.
  102. Ricci F., Not E., Arslan B. Web Site Personalization. Methods, Techniques and Applications to Travel and Tourism. ITC-irst, Technical report, December 2001, 25 pp. Ref. No.: 0112-02
  103. Ricci F., Venturini A., Mirzadeh N. Caritro Project - Intelligent Travel Recommendation - High Level Architecture. IRST Internal Report 0110-38, 2001.
  104. F. Ricci. Caritro Project - Intelligent Travel Recommendation - System Requirements. IRST Internal Report 0110-39, 2001.
  105. A.Perini, L.Senter, F.Ricci L'Agente Pianificatore del sistema di supporto alla gestione di emergenze ambientali ad uso del Consigliere Direttivo di un porto petroli. Progetto Enea-IDA: IRST Technical Report #9812-15. 1998.
  106. A.Perini, L.Senter, F.Ricci Architettura del Sistema di Supporto alle decisioni nel campo della Gestione delle emergenze. Progetto Enea-IDA. IRST Technical Report. 1998
  107. F. Ricci and D. W. Aha. Bias, Variance, and Error Correcting Output Codes for Local Learners. IRST Technical Report 9711-10, 1997.
  108. Paolo Avesani and Anna Perini and Francesco Ricci. A case base exploration Tool. IRST Technical Report, User Manual, 9701-10, 1997.
  109. F. Ricci and D. W. Aha. Extending Local Learners with Error-Correcting Output Codes. 9701-08, 1997.
  110. A. Gerevini, A. Perini and F. Ricci,. Incremental Algorithms for Managing Temporal Constraints. 9605-07, 1996.
  111. Ricci F., Avesani P. Nearest Neighbor Classification with a Local Asymmetrically Weighted Metric. 9602-01, 1996.
  112. Francesco Ricci. Applicazione di tecniche di apprendimento automatico per l'analisi dell' evasione contributiva. Internal Report 9612-18, IRST, 1996
  113. Francesco Ricci. Sistema di Gestione delle Fideiussioni. Internal Report 9612-19, IRST, 1996.
  114. Francesco Ricci and Paolo Avesani. Learning an asymmetric and anisotropic similarity metric for case-based reasoning. 1995.
  115. IRST. The IP Subsystem. Esprit charade internal report RR50B. 1995.
  116. F. Ricci, S. Mam, P. Marti, V. Normand, and P. Olmo. CHARADE: a platform for emergencies management systems. Technical Report 9404-07, IRST, 1994.
  117. Francesco Ricci, Anna Perini, and Stephane Pillorget. The constraint reasoner module specifications. Technical Report 9407-06, IRST, 1994.

118. Alcatel/ISR IRST and Italsoft. Sw specifications of the IP subsystem. Technical report 9407-04, IRST, 1994.
119. Francesco Ricci. Soluzione di sistemi ammaestrati. Studio di fattibilita', Internal Report 9402-01, IRST, 1994.
120. Francesco Ricci, Cecilia Nubola, and Angelo Turchini. Indicizzazione di informazioni su archivi storici. Studio di fattibilita', Internal Report 9403-13, IRST, 1994.
121. Paolo Avesani, Anna Perini and Francesco Ricci. The general charade architecture. the functional architecture of the demonstrator. Esprit charade rr 23-24. Technical Report 9307-30, IRST, 1993.
122. Anna Perini, Francesco Ricci and Paolo Avesani. Software specification of the demonstrator: a global view. Esprit charade rr 33a. Technical Report 9407-05, IRST, 1993.
123. Anna Perini, Francesco Ricci, Paolo Avesani and Pilar O. Mariscal. Design task modeling of the five fighting. Esprit charade cr 21c. Technical Report 9307-33, IRST, 1993.
124. Anna Perini, Francesco Ricci, Paolo Avesani and Maurizio Stocchero. Approaches and techniques for ai planning, esprit charade rr 51. Technical Report 9307-32, IRST, 1993.
125. Francesco Ricci. Solving constraint satisfaction problems using reinforcement schemes. technical report, IRST, 1992.
126. Francesco Ricci and Renzo Tomaselli. Studio di fattibilita' workflow. Internal report, IRST, 1992.
127. Alenia, Alcatel ISR, Italsoft, IRST, and Inisel. Characterisation of the primary application domain. Esprit charade internal report cr11. Technical report, IRST, 1992.
128. Francesco Ricci and Anna Perini. Scheduling con vincoli in un ambiente multicontesto. technical report 8904-08, IRST, 1989.

#### **Magazine Articles**

129. Ricci F., Venturini A., "Sistemi di raccomandazione per il turista elettronico", *Scienza&Business*, Nr. 1-2, gennaio 2003, pp. 22-30.
130. Francesco Ricci. Il futuro del turismo passa per l'informatica. *ITC Informa*, N.1, Febbraio 2002.
131. Francesco Ricci. Pianificazione semiautomatica per gli incendi boschivi. *ITC Informa*, 9(1), 33-34, 1994.