Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)	**Piero Fraternali**
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Nationality	Italian
Date of birth	April 19 1962
Gender	Male

Work experience

Dates	2002-now
Occupation or position held	Full Professor
Main activities and responsibilities	Deputy Director, Dipartimento di Elettronica e Infomazione Dean of the MSc Course in Computer Engineering of the Como Campus (2002-2009)
Name and address of employer	Politecnico di Milano
Type of business or sector	Education, Public University
Dates	1998-2002
Occupation or position held	Associate Professor
Main activities and responsibilities	Research and teaching
Name and address of employer	Politecnico di Milano
Type of business or sector	Education, Public University
Dates	1996-1998
Occupation or position held	Researcher
Main activities and responsibilities	Research and teaching
Name and address of employer	Politecnico di Milano
Type of business or sector	Education, Public University

Education and training

Dates	1992-1994
Title of qualification awarded	(Dottorato di Ricerca in Ingegneria Automatica e Informatica) PHD in Computer Engineering and Automation

Principal subjects/occupational skills covered	Computer Science and Engineering
Name and type of organisation providing education and training	Politecnico di Milano
Level in national or international classification	PHD
Dates	1989
Title of qualification awarded	Laurea in Ingegneria Elettronica (MSc in Electronic Engineering)
Principal subjects/occupational skills covered	Computer Science and Engineering
Name and type of organisation providing education and training	Politecnico di Milano
Level in national or international classification	MSc

Personal skills and competences

Mother tongue(s) **Italian**

Other language(s) **English, Spanish**

Self-assessment	Understanding				Speaking				Writing	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
Language	EN	C2		C2		C2		C2		C2
Language	ES	C2		C2		C1		C1		B2

(*) Common European Framework of Reference for Languages

Social skills and competences

Since 2006 I have done voluntary work with Engineers Without Frontiers (ISF-MI) Milano Chapter. Specifically, I have worked in Ecuador and Colombia, to assist schools in marginal quarters in developing technological curricula and connecting LA and EU Universities. I have visited several universities in Ecuador and Colombia, to develop bilateral teaching and research agreements with Politecnico di Milano

Organisational skills and competences

I have directed for 8 years the Career in Computer Engineering of the Como Campus, managing the transition to English teaching and internationalization of the courses and two governmental reforms of the teaching regulations. I have organized teaching labs in computer science, stages of students in companies and research labs, and developed the carter Web site of the international students on the Como Campus.
I am presently Deputy Director of the Dipartimento di Elettronica e Informazione of Politecnico di Milano, where I coordinate ICT services and communication services.
In the private sector, I have managed the spinoff of a high tech company (Web Models), advised several students in business plan development and company start-up.

Technical skills and competences

I teach database and object oriented programming, Web development and business process modelling and implementation with innovative ICT tools. Multimedia information retrieval and architectures for human and social computation.

Computer skills and competences

I have been teaching Computer Science for more than twenty years, developed tens of web applications and directed a hi tech start-up company in the ICT sector for three years.

Other skills and competences

I have been coordinating large, international, multidisciplinary research efforts in the following areas:

Web Engineering

I have proposed new design methods for data- and process-intensive Web applications. The major result is the Domain Specific Language WebML (Web Modeling Language). WebML provides graphical, yet formal, specifications, embodied in a complete design process, which can be assisted by visual design tools. I co-founded Web Models, a spinoff company whose mission is to build WebRatio, a tool for exploiting the WebML patent. The most significant results we have achieved are:

* Disseminating the use of WebML, which is now the most widely adopted conceptual model for Web applications; the first article on WebML had 828 citations, WebML is taught in about 50 universities worldwide (including many LA countries), and is widely used by researchers worldwide.

* With Web Models, building the tool suite WebRatio, which features about 3000 academic licenses and more than 100 commercial applications so far, including solutions for such large customers like Acer Corporation, Enel, Autostrade, Ikea, Unicredit, etc.

* Developing extensions of WebML covering process modeling, service-oriented architectures, Rich Internet Application interfaces, and semantic Web services.

These works have been published in many research articles, have been demonstrated in industrial and demo sessions of major conferences, have participated to international contexts, and are implemented in WebRatio.

Search Computing

"Who are the strongest European competitors on software ideas?" "Who is the best doctor to cure Search Computing is a new multi-disciplinary science which will provide the abstractions, foundations, methods, and tools required to answer these and many similar questions. While state-of-art search systems answer generic or domain-specific queries, search computing enables answering questions via a constellation of dynamically selected, cooperating search services, which are correlated by means of join operations. The idea is simple, yet pervasive. New language and description paradigms are required for expressing queries and for connecting services. New user interfaces and protocols help capturing ranking preferences and enabling their refinement. Search Computing research results are available at the site: http://www.search-computing.it/

Audiovisual Search and Search Based Applications

I have investigated the problem of developing applications where information retrieval is the leading interaction paradigm, with a specific interest on audiovisual content. The research is partially supported by European PHAROS Project in the VI Framework Programme, conducted in collaboration with Microsoft FAST, Engineering and France Telecom. We have shown how to use process and hypertext modeling notations and tools (notably WebML and BPMN) to specify the orchestration of the distributed processes supporting the annotation and indexing of audiovisual content and the front-end for rich audiovisual queries, with such features as keyword matching in automatically extracted meta-data, query refinement, query by similarity, query adaptation based on profile and social wisdom.

Human and Social Computation

I am the scientific director of the EU FP7 CUBRIK Integrated Project. CUBRIK aims at constructing a framework for multimedia search practitioners, researchers and end-users, where different classes of contributors can meet and advance the state-of-the-art by joining forces. The key technical principle of CUBRIK is to create a “white-box” version of a multimedia content & query processing system, by unbundling its functionality into a set of search processing pipelines, i.e., orchestrations of open source and third-party components instantiating current algorithms for multimedia content analysis, query processing, and relevance feedback evaluation. Examples will be pipelines for extracting metadata from media collections using the software mix that best fits application requirements, for processing multimodal queries, and for analysing users' feedback in novel ways. Important scientific contributions will be the systematic integration of human and social computation in the design and execution of pipelines, and the enrichment of multimedia content and query processing with temporal and spatial entities.

I also conceived the EU Research for SMEs project BPM4People (http://www.bpm4people.org), which aims at designing and bringing to the market innovative methodologies, software tools, and vertical applications for the implementation of Social Business Process Management (Social BPM), i.e., processes collaboratively defined and collaboratively executed by organizations and their stakeholders (employees, customers, citizens).

Additional information

Recent publications:

* Piero Fraternali, Massimo Tisi: Using Traceability Links and Higher Order Transformations for Easing Regression Testing of Web Applications. J. Web Eng. 10(1): 1-20 (2011)

* Liquid Query and Multimedia information Retrieval Chapters of the Search Computing Book (LNCS) to appear in 2010.

* Sara Comai, Alessandro Bozzon, Piero Fraternali, Giovanni Toffetti Carughi, A Conceptual Model for the Design of Web 2.0 Applications, 1. in "Handbook of Research on Web 2.0, 3.0, and X.0: Technologies, Business, and Social Applications", San Murugesan (Editor), Information Science Research, Hershey – New York, October 2009, ISBN 978-1-60566-384-5

* Marco Brambilla, Piero Fraternali, Emanuele Molteni, A Tool for Model-driven Design of Rich Internet Applications based on AJAX, in "Handbook of Research on Web 2.0, 3.0, and X.0: Technologies, Business, and Social Applications", San Murugesan (Editor), Information Science Research, Hershey – New York, October 2009, ISBN 978-1-60566-384-5

* Stefano Ceri, Piero Fraternali, Aldo Bongio, Marco Brambilla, Sara Comai, Maristella Matera Designing Data-Intensive Web Applications
The Morgan-Kaufmann Series in Data Management Systems, Jim Gray, Series Editor, December 2002, ISBN 1-55860-843-5

* Piero Fraternali, Stefano Ceri, Designing Database Applications With Objects and Rules: The Idea Methodology (Series on Database Systems and Applications), Addison-Wesley Pub Co; ISBN: 0201403692

More publications at:
http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/f/Fraternali:Piero.html

H-INDEX as of Oct 2011: 25 (Source Publish or Perish)
Most cited paper: tefano Ceri, Piero Fraternali, Aldo Bongio: Web Modeling Language (WebML): a modeling language for designing Web sites. Computer Networks 33(1-6): 137-157 (2000)
921 citations

Patents

* I am co-author of a patent owned by Politecnico on the WebML conceptual modeling language. US Patent n. US 6951271 B1 - Italy Patent n. MI99 A 001534).