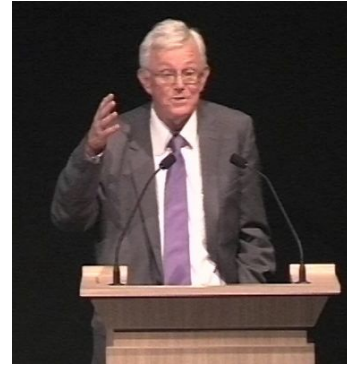


## Jean-Pierre Banâtre

Professor emeritus (Computer Science),  
Université de Rennes 1, France

Co-founder and CEO of Sabià Consulting

Born September, 10, 1948 at Saint Malo  
(France).



- **Education**

- PhD thesis, Université de Rennes 1, 1974
- « Docteur d'Etat ès Sciences mathématiques », Université de Rennes 1, 1980.

- **Employment**

- November 2012, CEO of Sabià Consulting
- November 2012, Professor Emeritus, University Rennes 1  
*July 2012, Co-founder (with Jean-Loïc Delhaye) of Sabià Consulting (<http://www.sabia-consulting.fr/en>)*
- September 2006-October 2012, on leave at Inria as Director of European Partnerships.
- 1993- August 2006, Professor of Computer Science, Université de Rennes 1 (ISTIC)  
*In 1993, promotion Professor of Exceptional Class (the highest university rank in France).*
- 1983-1993, Full professor of computer science à l'INSA (National Institute for Applied Sciences), Rennes.
- 1982-1983, Research Director at INRIA
- 1977-1981, IRIA researcher
- 1975-1976, Research associate , University of Newcastle upon Tyne (UK)
- 1966-1967, Teacher in a primary school, elementary level.

- **Administrative and collective responsibilities (an excerpt).**

- July 2012... co-founder and CEO of SABIÀ Consulting
- 2004-2008, qualified person concerning research at the Brittany Region.
- 2006-2012, director of European Partnerships at Inria and *member of the board of Directors at Inria.*
- 2003 upto now, Advisor for research for the Director of Ecole des Mines de Nantes
- 2002-2006, in charge of European partnerships at Inria.
- 1990-2002, *member of the board of Directors at Inria.*
- 1999-2002, director INRIA Rocquencourt (>600 people)

- 1990-1999, director INRIA, Rennes and IRISA (350 people)
- 1990-2000, founder and director of the Doctoral school in computer science and electrical engineering of Université de Rennes 1.

- **(Former) teaching activities**

- Courses concerning Programming methods and tools (Bachelor and Master levels).
  - Data types
  - Functional Programming.
  - Imperative Programming (sequential and parallel).
- Various conferences (mainly in Master Research)
  - Academic world in US, Europe, France.
  - European framework programmes.
  - How to write good research papers ?

- **Research activities.**

My research interests concern mainly programming languages, parallel programming, software architectures and distributed systems. I have been involved in a number of projects on these topics. I am author or co-authors of several books in the field of software architectures, In particular, I have written a book on Parallel Programming which was awarded “le prix Roberval” in 1991. Overall, I have published more than 100 papers in major journals and conferences. I am also co-inventor (with Daniel Le Métayer) of a new paradigm (Chemical Programming) which obtains an increasing success in the scientific community at a period where the appearance of new architectures and systems make it necessary to imagine new and unconventional programming models.

I have been member of numerous program committees et have organized numerous scientific events (conferences, workshops, ...). I have also been member of various visiting scientific committees in France and in Europe.

*I have always kept research activities, more or less intense, but nevertheless sustained while exerting high-level administrative responsibilities*

- **Theses supervision.**

Instead of giving an exhaustive list of theses I have supervised through my career, I prefer to mention some of my former students who hold important research responsibilities.: Daniel Le Métayer, specialist of security and privacy, is Research Director, 1<sup>st</sup> class (DR1) at Inria Grenoble, Valérie Issarny, specialist of software architectures for ambient intelligence, is DR1 at Inria Rocquencourt, Christine Morin, specialist of Cloud Computing, is DR1 at Inria Rennes. A number of other former students occupy interesting positions in the academic environment as well as in industry.

- **European and international activities.**

As Director of European Partnerships at Inria, I have visited all but one of the 28 countries of the EU as well as associate countries. As Director for Europe, I have also visited several countries outside Europe, with a clear objective of increasing our relationships by taking advantage of appropriate European programs. Without excess of immodesty, I think I possess a quite wide vision of European policies and of the possibilities offered by EU in the setting of scientific and technical cooperation in ICT.

Here is an excerpt illustrating my implication in various structures and missions.

*Some missions as expert :*

- European commission
- University of Bologna
- Spanish ministry of Science and Technology.

*Member of various committees (mainly in Europe), for example :*

- Steering Committee of AIR&D consortium (Virtual laboratory on Ambient Intelligence and Applications founded by Inria, Fraunhofer, Thomson and Philips)
- Executive Committee of ERCIM (European Research Consortium on Informatics and Mathematics)
- Governing Board of the XtremOS project (strategic EU project)
- Governing Board the Contrail project (strategic EU project, follower of XtremOS)
- Scientific Advisory Board the Network of Excellence COREGRID
- Board member of the European Technological Platform NESSI (software and services)
- Board member of the LIRA (Lifestyle European Association), recently created structure by Inria, Fraunhofer and Philips on the general topic of Health and Well-being
- Executive Board member of the Knowledge and Innovation Community (KIC), EIT ICT Labs (2010-2012).

- **Some words about ERC (European Research Council)**

Since the creation of this European initiative which aims at supporting basic and high risk/high gain Research in all disciplines, I have been strongly involved. From the initial stage, I was very supportive of this initiative which I knew would have a strong impact as a measurement tool for the quality of the academic research but also as a strong incentive for attracting for the best talents. I was also convinced that success at ERC would be a strong differentiating factor for Research Institutions (Universities, research institutes, ...) at the European level.

In the very initial phase of ERC, I took the decision to let my Inria colleagues know that, on a voluntary basis, I would be ready to « scientifically » coach the preparation of ERC proposals. As of November 2013, I am proud to say that 40 researchers (35 from Inria et 5 very close to Inria) are (or have been) ERC laureates. Inria, in ICT, is the first European institution in terms of number of laureates. This very demanding activity is absolutely fascinating and I intend to carry on with it in the coming years.

- **Some words about EIT ICT Labs**

I would like to insist here on my personal role in the setting up of this major undertaking called EIT (European Institute for Innovation and Technology) through my participation to the preparation and initial implementation of one of the three Knowledge and Innovation Communities (KICs).

Launched in 2008 by the European Commission, EIT has set up three initial KICs on Energy, Climate and ICT. The KIC EIT ICT Labs (in which I am still heavily involved) incorporates six nodes at the European level (Berlin, Eindhoven, Helsinki, Paris, Stockholm et Trento), London (which could be full node in 2014) Madrid and Budapest are associate nodes. KICs promote a strong « alliance » between Education, Research and Innovation+Business.

At the French level, the core partners are Université Pierre et Marie Curie (UPMC), Université Paris Sud-Orsay, Institut Télécom, Inria, Orange and Alcatel-Lucent. Rennes et

Nice are officially « satellites nodes», thus Université de Rennes 1 and Université de Nice participate to EIT ICT Labs activities. Inria has played a very decisive role in EIT ICT Labs, at the French level, but also at the European level.

Personally, I think I have played a key role in the operational setting of EIT ICT Labs, at the French level as well as at the global level. It appears now that, after a somewhat chaotic phase mainly due to the novelty of the concept, EIT ICT Labs appears on the right track with a strong governance under the leadership of its CEO, Prof. Willem Jonker. The recent announcement of the opening of the EIT ICT Labs Master School in 2012 is a first evidence of an upcoming success.

- **Distinctions**

- 1991 : Roberval Award « livre et de la communication en Technologie » for the book “ La Programmation Parallèle “.
- 1994 : Chevalier dans l’ordre des Palmes Académiques.
- 1997 : Chevalier dans l’Ordre national du Mérite.
- 2006 : Officier dans l’ordre des palmes académiques.
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- **City council.**

I was a city councilor from 1983 to 1989 in my native village, La Fresnais, in Ille-et-Vilaine, Brittany, France.

- **Some publications (excerpt)**

Apart from theses and books, I have chosen to present my publications according to the major topics I have concentrated during my career.

- **Theses**

Contribution à l'étude de méthodes et d'outils de construction de programmes parallèles et fiables. Thèse d'Etat, Université de Rennes 1, Décembre 1980.

Structure d'un compilateur ALGOL 68. Thèse 3ème cycle (PhD), Université de Rennes 1, Septembre 1974.

- **Books**

Jean-Pierre Banâtre, Pascal Fradet, Jean-Louis Giavitto, Olivier Michel : Unconventional Programming Paradigms, International Workshop UPP 2004, Le Mont Saint Michel, France, 15-17 September, 2004, Revised Selected and Invited Papers, Springer 2005.

Jean-Pierre Banâtre, Michel Banâtre, Les Systèmes Distribués, expérience du projet GOTHIC, InterEditions, Février 1991.

Jean-Pierre Banâtre, Sacha Krakowiak: Models and Paradigms for Distributed Systems Structuring - Introduction. Operating Systems Review 27(2) : 54-55 (1993).

Jean-Pierre Banâtre, Daniel Le Métayer : Research Directions in High-Level Parallel Programming Languages, Mont Saint-Michel, France, 17-19 Juin 1991, Proceedings Springer 1992.

Prospects for Functional Programming in Software Engineering Series : Research Reports Esprit Subseries : Project 302, Vol. 1, Banatre, Jean-Pierre, Jones, Simon B., Le Metayer, Daniel, 1991 (Springer éd.).

Jean-Pierre Banâtre: Parallel Program Design. Research Directions in High-Level Parallel Programming Languages 1991 ; Springer-Verlag Berlin and Heidelberg GmbH & Co. K (12 février 1992) : 296-297.

Jean-Pierre Banâtre : La Programmation Parallèle, 1990 (Eyrolles éd.).

- ***Publications in compilation.***

F. André, Jean-Pierre Banâtre, Jean-Paul Routeau : A Multiprocessing Approach to Compile-Time Symbol Resolution. ACM Trans. Program. Lang. Syst. 3(1) : 11-23(1981)

F. André, Jean-Pierre Banâtre, H. Leroy, G. Paget, Florimond Ployette, Jean-Paul Routeau: Kensur : An Architecture Oriented Towards Programming Languages Translation. ISCA 1980 :17-22

Jean-Pierre Banâtre, Jean-Paul Routeau, Laurent Trilling : An Event-Driven Compiling Technique. Commun. ACM 22(1) : 34-42 (1979)

Jean-Pierre Banâtre: Producing Optimised Code for Coercions. Inf. Process. Lett. 6(2) : 56-59 (1977)

- ***Publications in programming languages and software architectures.***

Valérie Issarny, Jean-Pierre Banâtre: Architecture-based Exception Handling. HICSS 2001,

Ciarán Bryce, Jean-Pierre Banâtre, Daniel Le Métayer : An approach to information security in distributed systems. FTDCS 1995 : 384-394

Jean-Pierre Banâtre, Ciarán Bryce, Daniel Le Métayer: Compile-Time Detection of Information Flow in Sequential Programs. ESORICS 1994 : 55-73

Jean-Pierre Banâtre, Ciarán Bryce : Information Flow Control in a Parallel Language Framework. CSFW 1993 : 39-52

Jean-Pierre Banâtre, Michel Banâtre, Florimond Ployette : The Concept of Multi-function: A General Structuring Tool for Distributed Operating System. ICDCS 1986 : 478-485

Jean-Pierre Banâtre : A Cooperation Scheme for Parallel Compilation. Method and tools for compiler construction 1983 : 207-218

Jean-Pierre Banâtre, Patrice Frison, Patrice Quinton : A Network for the Detection of Words in Continuous Speech. Acta Inf. 18 : 431-448 (1982)

Jean-Pierre Banâtre, Michel Banâtre: Parallel structures for vector processing. CONPAR 1981: 101-114

Jean-Pierre Banâtre, Michel Banâtre: Language Features for Description of Cooperating Processes. ICSE 1979 : 308-314

- ***Publications in distributed systems.***

Jean-Pierre Banâtre, Michel Banâtre: Fast Stable Storage as a Basis for Fault-Tolerant Architectures. Operating Systems of the 90s and Beyond 1991 : 167-170

Jean-Pierre Banâtre, Michel Banâtre, Christine Morin : Implementing Atomic Rendezvous within a Transactional Framework. SRDS 1989 : 119-128

Jean-Pierre Banâtre, Michel Banâtre, P. Leclercq, Florimond Ployette, P. Le Certen : Fragmented and replicated objects in the GOTHIC distributed system. ACM SIGOPS European Workshop 1988

Michel Banâtre, Gilles Muller, Jean-Pierre Banâtre : Ensuring Data Security and Integrity with a Fast Stable Storage. ICDE 1988 : 285-293

Jean-Pierre Banâtre, Michel Banâtre, Guy Lapalme, Florimond Ployette : The Design and Building of Enchère, a Distributed Electronic Marketing System. Commun. ACM 29(1) : 19-29 (1986)

Jean-Pierre Banâtre, Michel Banâtre, Florimond Ployette : Construction of a Distributed System Supporting Atomic Transactions. Symposium on Reliability in Distributed Software and Database Systems 1983 : 95-99

Santosh K. Shrivastava, Jean-Pierre Banâtre : Reliable Resource Allocation Between Unreliable Processes. IEEE Trans. Software Eng. 4(3) : 230-241 (1978)

- ***Publications in unconventional programming models and chemical programming.***

Jean-Pierre Banâtre; Christine Morin; Thierry Priol : Fault Tolerant Autonomic Computing Systems in a Chemical Setting. Jones, Cliff B. ; Lloyd, John L.. Dependable and Historic Computing, 6875, Springer, Oct. 2011, Lecture Notes in Computer Science, 978-3-642-24540-4

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : Classical coordination mechanisms in the chemical model. From Semantics to Computer Science 2009. Essays in Honour of Gilles Kahn, edited by Yves Berthod, Gérard Huet, Jean-Jacques Lévy and Gordon Plotkin : 20-50

Jean-Pierre Banâtre ; Thierry Priol : Chemical Programming of Future Service-oriented Architectures. Journal of Software (JSW), Academy Publisher, 2009, 4 (7), pp. 738-746

Alvaro Arenas, Jean-Pierre Banâtre, Thierry Priol : Developing Autonomic and Secure Virtual Organisations with Chemical Programming. Ajoy K. Datta and Rachid Guerraoui and Franck Petit. The 11<sup>th</sup> International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2009), Nov 2009, Lyon, France. Springer, Stabilization, Safety, and Security of Distributed Systems, 5873, Lecture Notes in Computer Science

Jean-Pierre Banâtre, Thierry Priol, Yann Radenac : Service Orchestration Using the Chemical Metaphor. SEUS 2008 : 79-89

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : The Chemical Reaction Model Recent Developments and Prospects. Software-Intensive Systems and New Computing Paradigms 2008 : 209-234

Jean-Pierre Banâtre, Nicolas Le Scouarnec, Thierry Priol, Yann Radenac : Towards "Chemical" Desktop Grids. eScience 2007 : 135-142

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : Towards chemical coordination for grids. SAC 2006 : 445-446

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : A Generalized Higher-Order Chemical Computation Model. Electr. Notes Theor. Comput. Sci. 135(3) : 3-13 (2006)

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : Generalised multisets for chemical programming. *Mathematical Structures in Computer Science* 16(4) : 557-580 (2006)

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : Principles of Chemical Programming. *Electr. Notes Theor. Comput. Sci.* 124(1) : 133-147 (2005)

Jean-Pierre Banâtre, Yann Radenac, Pascal Fradet : Chemical Specification of Autonomic Systems. *IASSE 2004* : 72-79

Jean-Pierre Banâtre, Pascal Fradet, Yann Radenac : Higher-Order Chemical Programming Style. *UPP 2004* : 84-95

Jean-Pierre Banâtre, Pascal Fradet, Daniel Le Métayer : Gamma and the Chemical Reaction Model: Fifteen Years After. *WMP 2000* : 17-44

Jean-Pierre Banâtre: Parallel Multiset Processing : From Explicit Coordination to Chemical Reaction. *COORDINATION 1996* : 1-11

Jean-Pierre Banâtre, Daniel Le Métayer : Programming by Multiset Transformation. *Commun. ACM* 36(1) : 98-111 (1993)

Jean-Pierre Banâtre, Daniel Le Métayer : The GAMMA Model and Its Discipline of Programming. *Sci. Comput. Program.* 15(1) : 55-77 (1990)

Jean-Pierre Banâtre, Daniel Le Métayer : Chemical Reaction as a Computational Model. *Functional Programming 1989* : 103-117

Jean-Pierre Banâtre, Michel Banâtre, Patrice Quinton : Constructing parallel programs and their termination proof. *ICPP 1982* : 224-225