



## **KUONEN Pierre**

Born on the 23th of July 1958, Swiss, Married.

Native language: French

Private:

Sentier des Communs 1, CH-1807 Blonay.

☎ +41 21 943 13 37

Professional::

University of Applied Sciences of Western Switzerland,  
Bd. de Péroilles 80, CH-1705 Fribourg.

☎ +41 26 429 65 65, E-mail: Pierre.Kuonen@hefr.ch

## **Degrees**

### **1993**

Ph.D. at the Computer Science Department of the Swiss Federal Institute of Technology (EPFL). Thesis' Title: "La programmation parallèle asynchrone et son application aux problèmes combinatoires".

### **1986**

Postgraduate certificate in Computer Science: "L'intelligence artificielle et ses applications industrielles".

### **1982**

Master Degree in Electrical Engineering from the Swiss Federal Institute of Technology (EPFL).

## **Professional Background**

### **Current position (since March 2003)**

*Professor of Computer Science at the University of Applied Sciences of Western Switzerland, Fribourg (HES-SO/EIA-FR).* I am a member of the department of information and communication technologies (ICT). I dispense lessons in the field of software engineering, programming and distributed systems. My research activities mainly include two themes: Intensive distributed computing (GRID, P2P, meta-computing, ...) and ubiquitous systems (Ubiquitous Computing). I am leader of Grid & Ubiquitous Computing Group.

### **2000-2002**

*Professor of Computer Science at the Haute Ecole vlaise (HEVs).* HEVs is member of HES-SO. I was involved in teaching object oriented programming and design techniques (C++, UML). Beside my teaching activity I headed several Ra&D research projects at the national (HES-SO and CTI projects) and international level (FP5, European project).

### **1994 - 2000**

*Scientific collaborator at the Computer Science Theory Laboratory (LITH) of EPFL, leader of the Parallel Computing Research Group (GRIP).* I founded this group in 1994. I have assumed the scientific as well as the financial and administrative leadership of this group that had, depending on the on-going projects, from 3 to 10 researchers. From 1994 I mounted and managed several national and European research projects.

I was a senior lecturer for the course "Parallelism" for third and fourth year students at the Computer Science Department of EPFL.

### **1988 - 1994**

*Assistant at the Computer Science Theory Laboratory of the EPFL.* I was involved in teaching (programming, programming languages theory, semantics, pattern recognition) and research on parallel and distributing computing. During this period I realized my Ph.D. thesis.

### **1986**

*Postgraduate course in Computer Science on the theme: "L'intelligence artificielle et ses applications industrielles".* In parallel to my professional activity at Charmilles Technology SA, I attended this course at the EPFL. In this framework, I realized a practical work in the field of interest of my employer (CAM: Computer Aided manufacturing).

**1983 - 1987**

Engineer at the R&D department of the company CHARMILLES TECHNOLOGIES S.A in Geneva. Involved, with a team of around 10 engineers, in the development of Computer Aided Design tools. In 1988 I was leader of an expert system project.

**1982 - 1983**

Field Engineer with SCHLUMBERGER OVERSEAS S.A. in Africa in the petroleum industry. After having attended the appropriate formation in a Schlumberger School Center in Nigeria (3 months), I was in charge of carrying out measurements on an offshore oil rig at Pointe Noire (Congo).

**Recent projects related to GRID and distributed computing**

- SmartGRID*: SmartGRID project aims at filling the gap between the desired characteristics of an application i.e. robustness, reliability, and efficiency and the natural characteristics of a Grid computing environment i.e. volatile, dynamic and heterogenous. The challenge of filling this gap implies to address two problems: first, to be able to schedule a dynamic set of processes dynamically on the grid, and second, to be able to monitor the network and computing infrastructure in a very reactive way. In collaboration with the University of Fribourg. On-Going.
- SMSGC, Swiss Multi-Science Computing Grid*: The primary goal is to provide computational resources to solve scientific computational problems. This involves the installation, commissioning and operation of a computational grid across several institutions of the Swiss higher education sector with active involvement of applications from different scientific domains. In the frame of SwiNG. On-going
- ISS, The Intelligent GRID Scheduling System*: GRID middleware infrastructure built around an Intelligent GRID Scheduling System in which, according to collected data on the machines, on the behaviour of applications and on the performance desired by the user, the best-suited computational resources to execute the application are detected, allocated to the application, and monitored during execution. In collaboration with CSCS and EPFL. Terminated mid 2008.
- CoreGRID*: The unique Network of Excellence for GRID research activities CoreGRID is a European "Network of Excellence" (NoE) funded by the European Commission's 6th Framework Program. Terminated end of August 2008.

**Most recent publications**

1. "SmartGRID: A fully decentralized Grid Scheduling Framework supported by Swarm Intelligence", Ye Huang, Amos Brocco, Pierre Kuonen, Michele Courant, Beat Hirsbrunner, in the proceedings of IEEE: Seventh International Conference on Grid and Cooperative Computing (GCC2008), 24-26 Oct. 2008, Shenzhen, China.
2. "IANOS: An intelligent application-oriented scheduling framework for an HPCN Grid", Hassan Rasheed, Ralf Gruber, Vincent Keller, Wolfgang Ziegler, Oliver Waeldrich, Philipp Wieder and Pierre Kuonen, in Grid Computing: Achievements and Prospects, S.Gorlatch, P.Fragopoulou, T.Priol Eds, Springer US, 2008, ISBN 978-0-387-09456-4.
3. "Integrating Wireless Sensor Networks and the Grid through POP-C++", Augusto B. de Oliveira, Lucas F. Wanner, Pierre Kuonen, Antônio A. Fröhlich in the Proceedings of the International Embedded Systems Symposium 2007 (IESS'07), Irvine, CA, USA, May 29 - June 1 2007.
4. "Programming the Grid with POP-C++", T. A. Nguyen, P. Kuonen, in Future Generation Computer Systems (FGCS), N.H. Elsevier, Volume 23, Issue 1, 1 January 2007, pages 23-30.
5. "Smart Grid Node : un noeud intelligent pour la grille", K. Cristiano, P. Kuonen, in O.Beaumont and V. Boudet, editors, RenPar'17, 17èmes Rencontres francophones du Parallélisme, Perpignan, France, pages 164-171, October 2006.

**Miscellaneous**

- Co-founder of SwiNG association, Chairman of the SPEEDUP Society until 2007, Co-Founder and member of the steering committee of SOS international workshops series on Distributed supercomputing.