

WORKSHOP

ScalPerf'04: SCALABLE APPROACHES to HIGH PERFORMANCE and HIGH PRODUCTIVITY COMPUTING

September 19-23, 2004

Bertinoro International Center for Informatics
<http://www.cs.unibo.it/bici/>

Sunday, September 19

- 18:00-21:00 **Check-in & Reception** (“Seminario”)
19:30-21:00 **Welcome Buffet** (“Seminario”)

Monday, September 20

- 08:45-09:15 **Registration**
09:15-09:30 **Welcome**
09:30-10:30 **Panel I: Tailoring machines to applications**
Part A: Target Questions
10:30-11:00 **Coffee**
11:00-11:45 Challenges in Contemporary Processor Design
Pratap Pattnaik (IBM Thomas J. Watson Research Center)
11:45-12:30 Special Purpose vs. General Purpose: A case study with BlueGene/L
Jose E. Moreira (IBM Thomas J. Watson Research Center)
13:00-14:00 **Lunch**
14:45-15:30 Utilizing Reconfigurable Computing Platforms for Computational Fluid Dynamics
Gerhard Lienhart (University of Mannheim)
15:30-16:15 Hydra: the Distributed, FPGA Accelerated Chess Program
Ulf Lorenz (Paderborn University)
16:15-16:45 **Coffee**
16:45-17:30 Overview of the HARWEST Project (HARdWare and software co-dEsign for computing sySTems)
Paolo Palazzari (ENEA - C.R. Casaccia)
17:30-18:15 Is there a General Purpose Approach to Latency Hiding?
Gianfranco Bilardi (University of Padova)
20:00-21:00 **Dinner** in Bertinoro (“L’Osteria della Serafina”)

Tuesday, September 21

- 09:00-9:45 Dedicated computing for Lattice Chromo-Dynamics: State-of-the-Art and future Prospects
Raffaele Tripiccione (University of Ferrara)
- 9:45-10:30 Bandwidth-Memory-Processing Tradeoffs for Lattice QCD Computations
Andrea Pietracaprina (University of Padova)
- 10:30-11:00 **Coffee**
- 11:00-13:00 **Panel I: Tailoring machines to applications**
Part B: Answers and Directions for Further Research
- 13:15-14:15 **Lunch**
- 14:30-23:30 **Excursion** to Urbino including **Social Dinner**

Wednesday, September 22

- 09:00-10:00 **Panel II: Tailoring applications to machines**
Part A: Target Questions
- 10:00-10:45 Performance Modeling of Extreme-Scale Parallel Systems and Applications
Adolfy Hoisie (Los Alamos National Laboratory)
- 10:45-11:15 **Coffee**
- 11:15-12:00 Deployment of High Performance Computing: real solutions in the scale-up of applications
Sigismondo Boschi (CINECA)
- 12:00-12:45 FFTW: Towards a Minimal Compositional Framework for High-performance FFTs
Steven G. Johnson (Massachusetts Institute of Technology)
- 13:00-14:00 **Lunch**
- 15:00-15:45 SmartApps: Adaptive Applications for High Productivity / High Performance
Lawrence Rauchwerger (Texas A&M University)
- 15:45-16:30 STAPL pContainers: Efficient, Scalable, Portable and Easy to Use Distributed Data Structures
Nancy Amato (Texas A&M University)
- 16:30-17:00 **Coffee**
- 17:00-17:45 Experiences with the Design of Cache-Aware Numerical Algorithms
Ulrich Rüde (University of Erlangen-Nuernberg)
- 17:45-18:15 On the Compilation, Debugging, and Parallelization of Recursive Divide and Conquer Algorithms
Alex Nicolau (University of California, Irvine)
- 20:00-21:30 **Dinner** in Bertinoro (Restaurant “Il Belvedere”)

Thursday, September 23

- 09:00-09:45 Translating Submachine Locality into Locality of Reference
Geppino Pucci (University of Padova)
- 09:45-10:30 X-Ray : Automatic Measurement of Hardware Parameters
Kamen Yotov (Cornell University)
- 10:30-11:00 **Coffee**
- 11:00-11:45 SPIRAL Code Generation for DSP Algorithms: Overview and Future Directions
Markus Püschel (Carnegie Mellon University)
- 11:45-12:30 Think Globally, Search Locally
Keshav Pingali (Cornell University)
- 13:00-14:00 **Lunch**
- 14:30-16:30 **Panel II: Tailoring applications to machines**
Part B: Answers and Directions for Further Research
- Adjourn**
- 19:30-20:30 **Dinner** (“Seminario”)
-

General Information

Organizing Committee

Gianfranco Bilardi (University of Padova) and *Pratap Pattnaik* (IBM Research).

Secretariat

Ms. *Elena Della Godenza*

E-mail: edellagodenza@centrocongressibertinoro.it

Phone: +39 0543 446500

Fax: +39 0543 446599

Workshop Site

University Residential Centre of Bertinoro Via Frangipane 4&6 Bertinoro (FC), ITALY

More specifically, two buildings are involved in the activities:

- “Seminario” (Via Frangipane 4): **check-in**, reception, cafeteria, some of the guest rooms;
- “Rocca” (Via Frangipane 6): meeting room, computer room (24/7), office, some of the guest rooms.
- “La Badia” (Via Badia 4): some of the guest rooms.

Directions

Please, consult the web page

http://www.centrocongressibertinoro.it/en/dove_siamo/index.htm

Parking is available, if you come by car.

If you arrive by train, the recommended stations are Forlì (coming from North) and Cesena (coming from South), both about 13 kilometers from the Centre. From either station, one can take a taxi to Bertinoro (approx. 25 Euro). A third station, Forlimpopoli, is closer but (a) most trains do not stop there and (b) taxis are not available near the station.

Arrival/Reception

The check-in desk is in the “Seminario” building. A welcoming reception, including buffet dinner, is planned for Sunday, September 19, from 18:00 to 21:00, in the “Seminario.” During the reception, you may contact Mr. *Carlo Venturi* (xxx xxxxxx) or the switching board (0543 446500). You can also reach *Gianfranco Bilardi* (xxx xxxxxxxx). In case of late arrival, please go directly to the “Seminario” and ring the bell with the label “Custode”.

Accommodations & Meals

Registration includes accommodations at the workshop site for the five nights September 19-23 as well as meals, from the dinner of September 19 to the breakfast of September 24. Please, send e-mail, specifying your planned arrival and departure dates, as well as any special needs, to:

- *Elena Della Godenza* (edellagodenza@centrocongressibertinoro.it),
- *Gianfranco Bilardi* (bilardi@dei.unipd.it).

Registration

Registration will be on site. The registration fee is Euro 700.00, reduced to Euro 350.00 for junior participants (reduced registration entitles to accommodations in a double room). Major credit cards, cash, and checks in euros drawn on Italian banks are acceptable forms of payment.

Sponsorship

ScalPerf'04 is sponsored by:

- BICI: The Bertinoro International Institute for Informatics
- The Centre of Excellence “Science and Applications of Advanced Computing Paradigms” of the University of Padova
- IBM Italia
- CASPUR: Consortium for Applications of Supercomputing to University and Research