The Pisa approach to Logic Programming

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Logic and Energy: a visionary Inspirator

Pisa ‘09
Why a success story? A retrospect

- Giorgio’s charisma and leadership
- The background of the IEI group
- A theoretical approach always motivated by complex applications needs
- A vision of what CS would or could be

How?: An annotated bibliography
From image processing and pattern recognition to AI

AI: languages, semantics, theorem proving and problem solving

The role of new PL’s with clear semantics to prove properties

- Marco Bellia, Giorgio Levi: Distributed Control, Modularity and Data Types in a Simple *Parallel Language*. International Computing Symposium 1977: 441-450
Putting semantics at work


1979-1986 CNET:
- Communication networks
- System language
- Semantic models
- Integrated environment for sw development
- Office automation
The beginning of LP in Pisa: Logic + Functional and Concurrency


“The distributed systems we want to model can be viewed as dynamically evolving Systems of Computing Agents (SCA)” [set of agents interconnected through channels]
Consolidating the group

Concurrency, L+F, The S-semantics

- Giorgio Levi: Logic Programming: The Foundations, the Approach and the Role of Concurrency, 1986
- Giorgio Levi, Catuscia Palamidessi: An Approach to the Declarative Semantics of Synchronization in Logic Languages, ICLP(JICSLP), 1987
- Moreno Falaschi, Giorgio Levi: Finite Failures and Partial Computations in Concurrent Logic Languages, FGCS, 1988
Main directions

- S-semantics: more informative to capture all the different computational aspects (negation, infinite comp.,…)
- Language integration (functional, constraints, objects, higher order, …)
- Semantics at work: abstract interpretation, metapropgrams,…
- Concurrency
Conclusion

- For being part of an extraordinary group of people
- For being taught how to do research
- For being a friend
- For being the Best Man at my wedding
Thank you

Giorgio