

# An Example Interview

*by the Challenges in CS committee*



# Goals of the Talks

- Gain experience in giving presentations
- Gain concrete understanding of scientific researchers in computer science
- Gain a broader idea of ongoing CS research.
- *Note: This is only a "satisfactory" level talk. We hope yours will be better.*



# Schedule

07-04-2008 - Group 1 Bas Hamar de la Brethonière, Tom Groentjes

07-04-2008 - Group 2 Tim Meulendijks, Alex Meijer, Evert Mouw

07-04-2008 - Group 3 Derk Mus, Eric Nieuwenhuijsen, Karel van Osselen

07-04-2008 - Group 4 Frank van Rijn, Frank de Ruiter, Jaron Viëtor

14-04-2008 - Group 5 Dominique van de Vorle, Erik Zandvliet, Patric Stout

14-04-2008 - Group 6 Julius-Carl Carolina, Giso Dal, Harma Everts

14-04-2008 - Group 7 Joost van der Blom, Robin v.d. Broek, Oswald de Bruin

14-04-2008 - Group 8 Dennis Futselaar, Niels Heisterkamp, Martijn Keizer

14-04-2008 - Group 9 Tom ter Laak, James Lo, Lars van Luik



# Background

## □ Marcello Bonsangue

- Master at University fo Milano, Italy (1992)
- Ph.D. at Vrije Universiteit, Amsterdam (1996)



- NWO postdoc at LIACS (1996 – 1998)
- Junior researcher CWI (1998 – 2000)
- KNAW fellow at LIACS (2000 – 2005)
- Assistant professor (2005 – today)



# A successful ERASMUS story

- **Erasmus** is a European Commission exchange programme to study for part of their degree in another country
- Bonsangue has been **Erasmus student** at University of Amsterdam for 6 months
  - Goal: to study computational linguistic
    - A field about understanding natural languages from a computational perspective
  - Result:
    - Two examinations recognized in Italy
    - A nice international experience
    - Contacts with other researchers, good for PhD position after master



# Today

- Member of the **FaST** group
  - Foundation of Software Technology
  - Headed by Prof. Arbab and Prof. Kok
  - Other people:
    - Luuk Groenewegen
    - Jetty Kleijn
    - Frank de Boer
    - Some PhD students



# Research interest

- Interest in Formal Methods, **Coalgebras** and Logics
- Involved in national and european research projects
- Supervised/supervisor of 7 PhD. students



# Coalgebras

- Coalgebras are a mathematical model for the reactive behaviour of systems
  - Generalization of finite automata
- They are **dual** to algebras

<i>Algebra</i>	<i>Coalgebra</i>
Induction	Coinduction
Congruence	Bisimulation
Initial	Final



# Relevance

- One general theory
  - Results may be specialized to existing cases
    - Deterministic automata
    - Transition systems
  - but also applied to new ones
    - Digital and sequential circuits
- Connection with modal logics
  - Verification, synthesis and specification



# Important results obtained

- Automatic generation of **sound and complete** logics for coalgebras
- New logic for the specification of **dynamic** structures
- **Regular expressions** for coalgebras



# Good and bad

- I like to do research, but I am lazy.
- Walking along new ideas in research is a lot of work, that costs a lot of energy and with many obstacles.
- I find excuses to delay its start: a report has to be written, examination must be corrected, I need to see who won the European Championships, etc.
- Then I start doing research, and I enjoy all of it. Solving a problem that keeps your mind busy for some days is fun.



# Professional responsibility

- We as university teachers are not only a means to transfer knowledge of basic computer science to students.
- It is also our professional responsibility to try to explain our enthusiasm for research, where computer science is headed, what is on the frontier.



# Final question

- Why in your field of Formal Methods should we consider social issues?
- What people want is **quality product**. Software developers have a moral obligation to put quality, which is more than mere efficiency, into their products. It comes with a cost, and we can give them the tools and techniques to guarantee better products.



# Common Presentation Mistakes

- Too much text! Don't put a book in your talk.
- No humor - even 1 slightly amusing graphic can tremendously help a talk, create a connection to the audience.
- Don't "Core dump" - your talk should follow a clear line of reasoning or explanation, not simply throw facts at the audience.



# Remember

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*"Its the wizard, not the wand."*

The focus is really on the presenter - the slides are the accompaniment - they help the presentation but are secondary to your delivery.



# One Question for all Presenters

On the last slide, please answer:

*What criteria are necessary for something to be "scientific research"?*

