

MSCA Day @ GSSI

A supervisor viewpoint

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Let's start from the end

Reversible **ca**usally-consistent **de**bugging of concurrent programs

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RCADE (MSCA-IF-2017)

- Theoretical project (“standard” computations go from inputs to outputs; “reversible” computations go both ways)
- Debugging aims at finding defects of software
 - debugging of “sequential programs” = “rewind” executions
 - debugging of “concurrent programs” = ???
- Debugging costs: $\sim 312 \times 10^9$ USD a year (in 2013!)

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Aims

RCADE = causally-consistent reversibility & debugging concurrency
+ applications ...
+ **training**

How it started

Some ingredients

- track record in the topic
 - fellow's PhD
 - I developed causal models of distributed computations
 - supervisors expert on concurrency & causal models
- we got in touch with a couple of companies
- supervisors attended a workshop on MSCA organised @ UoL

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The occasion

- COST Action IC1405 on reversibility
 - led by Irek Ulidowsky (the other supervisor)
 - at one of the meetings we proposed the fellow to apply with us
 - I visited Claudio and he visited us
- a lot of "implicit" brainstorming / knowledge exchange
- we started to draft the application in summer 2017 (supported by IC1405)

What bothered us

- We were confident about *the science*...
- ... as much as we were convinced **it wasn't enough!**
- we needed to strengthen impact
 - on training we were fine
 - but outreach was weak
 - therefore we came up with the idea of organising a workshop with industries
 - hence we needed industrial partners
- we had to reconcile conflicting interests
 - academics love theorems
 - MSCA loves **training**
 - companies love...well we all know

It paid off

We were successful

- 1st attempt (totally unexpected)
- 97.6 / 100
- one company got very excited (and offered technical support)
- a failure could be a gain (e.g., networking: in our case companies, Valencia, IC London, Kent)

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 - be proactive: an email may be enough
 - be open: I had to write a mini-project to convince one of the companies about the commercial potential of RCADE's results
 - handle IP issues

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- TCS projects specific:
 - keep refining and sharpening the proposal!
 - it may not be easy to convince on outreach