



European robotics PhD Schools

European Robotics Forum
Västerås, Sweden
April 8, 2011, 15h30

- To set the **theme** of the PhD Schools:
To focus our students on the “big picture”!
- To discuss the **concept** of the PhD Schools
(To teach our students about **robot system integration!**)
- To discuss the **software infrastructure** to support the PhD Schools
(To establish a **community-driven shared “knowledge server”!**)
- To **prepare** three PhD Schools in Summer 2011
(**knowledge engineering**, entrepreneurship, dual-arm manipulation, software engineering, . . . ?)

My personal motivation: I've experienced too many failed robot system integrations!

- Is one of a set of three complementary **Tasks** within the *euRobotics Coordination Action* that I am responsible for:
 - PhD Schools
 - Semantic web for robotics
 - Advanced Training for industry
- The ambition, design and implementation of the PhD Schools should lead to a seamless integration into the European service robotics **industry** of:
 1. our post-docs (“human production”)
 2. our research (“knowledge production”)

- There is an **expert budget** available to involve committed members of the community (**You!**) to help with:
 - **critically clarifying** the concept
 - the community-based **knowledge server** infrastructure
 - the **preparation** of the PhD Schools
 - the **organisation** of the PhD Schools: “Call for Hosts”
 - the **coaching** during the PhD Schools: “Call for Teachers”
 - the **evaluation and crediting** of the PhD Schoolsand, hopefully, also with **sharing the glory!** :-)

Difference with traditional PhD Schools:

- Focus on the **breadth** of the robotics domain:
 - what **knowledge** and **skills** does one need to **build systems**?
 - to turn **integration** into a scientific/technological discipline.⇒ this means the PhD Schools are for **junior, senior and post-doc** students!
- Search for **minimal amount of (knowledge) models** needed to understand **all** of robotics
- **Encode** that knowledge in a **formal** way, so that also our **robots** can use it.
(And also the to-be-established **semantic web** robotics portal!)

Difference with traditional PhD Schools (2):

- Provide that knowledge in a **public, sustainable** way, so that all **lecturers, teachers** can use it.
- **Reach out to industry**, so that the material can be used for **customized training sessions**.
- This can be one of the foundation of the *euRobotics* instrument of **Advanced Training** for industry:
 - Companies make “Call for training”: **pull**
 - Professors make “Call for trainees”: **push**
 - euRobotics establishes a **brokerage** between both, with **quality control**

- Group of 3–4 coaches, instead of lecturers.
- Not focused on sensing, control, mechatronics, . . . in isolation, but:
 - on complete sub-domains of robotics
 - approached as fully vertically integrated challenges
 - with the open worlds assumption as major driver
- Sense of responsibility towards community:
 - “Giving back” what you’ve learned, in improved, structured form
 - Think about our poor robots, and don’t let them have to learn everything from scratch, all over again :-)

- Expert meeting preparing the “details’: **Leuven, 7–9 July, 2011:**
 - Quality control?
 - ECTS credits?
 - Licensing?
 - Sustainability?
 - Harmonization over multiple Schools and years? ...

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