

The academic challenges originating from the European robotics SRA

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Finally...!

- ▶ I started research in robotics exactly 20 years ago...
- ▶ ...with the robotics **industry** always being, at best, a **distant relative**.
- ▶ The European Commission put “**pressure**” on industry (EUROP/CARE) and academia (EURON) to cooperate on the **Strategic Research Agenda**...
- ▶ ...and this has resulted in **much more** than just the SRA!

Challenges, indeed!

- ▶ The SRA contains **dozens** of **advanced research** challenges, but **the** challenge is to stimulate academia to solve them!
- ▶ What is the problem?
 - ▶ Academia has a **small scope, component-level focus**, working towards just “**Look ma, no hands!!!**” proofs-of-concepts.
 - ▶ Industry needs **system-level applications**, with focus on **robustness and maintainability**.

Our stakeholders

- ▶ Academia + industry have **to work together** with the **“external stakeholders”**: the general public, the Science & Technology press, the R&D funding agencies, the European Commission, the academic governments.
- ▶ Academia have problems **hiring motivated, competent students**, with an interest in **entrepreneurship**.

What could we do? —“Talk” to each other!—

- ▶ Currently, robots are **information islands**, without any standardization of **data communication, programming languages**, or even **terminology**!
- ▶ From 2010, EUROP and EURON will organize their **Annual Meetings together**!
- ▶ Initiatives are growing **to share advanced training**!
- ▶ Science **journalists** don't know about European robotics!

What could we do? —“Challenge” each other!—

- ▶ **Grand Challenges** (with considerable price money) have proven **“to work”**!
- ▶ Robot **competitions** in many of the SRA's application domains **exist already**, but:
 - ▶ **not in sufficiently professional** form.
 - ▶ **not “coordinated”**.
- ▶ **Academic chairs** in applied robotics...?!?!?

What could we do? —“Work” with each other!—

- ▶ **Industrial internships** for PhDs and professors.
- ▶ The (brand new) **ECHORD** project gives academics access to **real industrial** robot platforms!

What could we do? The emperor’s new “citation index” clothes

- ▶ Our universities’ **evaluation procedures** lead to **too many, too fragmented, too expensive**, and **too inaccessible** publications!
- ▶ **Citations** are indeed **easier to count** than **industrial usefulness** . . .
- ▶ **All** responsables know the situation, but **don’t dare** to take appropriate actions **in isolation!**

Conclusions

- ▶ Some major challenges are **non-technical** or **non-scientific**.
- ▶ We must start talking to our **“new” stakeholders**:
 - ▶ Journalists.
 - ▶ Academic governments.
- ▶ Footnote: Europe will have **big problems** filling all available robotics research jobs. . .