STUDYING HUMAN-ROBOT COLLABORATION IN AN ARTISTIC CREATIVE PROCESS

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• The robotic instrument observes the performer and learns about the piece being composed

• The robotic instrument monitors the level of engagement of the musician with the performance activity

• The robotic instrument observes a drop in engagement, it decides to make interventions coherent with the musical discourse in progress, until performer’s engagement recovers.
NOISA is an intelligent system that monitors and maintains the user's engagement in musical interaction.
Interaction for Human-Robot Collaboration

Can be designed

A user-centred design process

Cannot be designed, only studied and understood
Interaction Design for Human-Robot Collaboration: A user-centred design process

OURCES OF REQUIREMENTS

TECHNOLOGY FACTORS
- Availability
- Affordability
- Versatility
- Complexity...

HUMAN FACTORS
- Cognitive
- Perceptual
- Emotional
- Socio-cultural...

APPLICATION -DOMAIN FACTORS
- Use case specific
- Stakeholder
- Environmental
- End -oal related...

Select "mix of metrics" to evaluate requirements

Quantitative metrics
Qualitative metrics
**PRODUCTIVITY**

**APPLICATION DOMAIN:**

*E.g.: “Collaborative assembly of a product, from its components”*

- Person and robot share same exact target model
- Productivity metrics mostly
ARTISTIC CREATIVE APPLICATION DOMAIN:

*E.g.:* “Collaborative musical creation through live improvisation”

- An exact target model does not exist, only intentions on the artist’s mind
- Largely qualitative metrics of an aesthetic and heavily subjective nature

**Sources of Requirements**

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- Quantitative metrics
- Qualitative metrics
THANK YOU

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