Specialization Course

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1 Course code and Name

IE505818 Specialization Course

2 Topic

Affordance Learning for Interaction Design

3 Course content

1. Affordance Theory
   (a) Basic concepts in affordance theory.
   (b) Affordance analysis methods.
   (c) Applications of Affordance Theory in the field of Interaction Design.
   (d) Recent advances in Affordance Theory.
2. Reinforcement Learning
   (a) Reinforcement Learning basics.
   (b) Evaluation methods for Reinforcement Learning algorithms.
   (c) Reinforcement Learning applications in the interaction design.

4 Learning outcome

1. Knowledge
   (a) To understand Affordance Theory in the context of Interaction Design.
   (b) To comprehend and compare the different Reinforcement Learning algorithms.
   (c) To connect the research of affordance theory with applications in robotic design.

2. Skill

   (a) Literature review in the related research fields.

   (b) Technical skills to implement different RL algorithms and techniques.

3. General Competence

   (a) Ability to communicate affordance theory and deep learning concepts and main challenges in the related areas.

5 Evaluation

1. Oral Exam, including a presentation about topic introduction, related works, problem analysis, evaluation and conclusions.

6 References

1. The Design of Everyday Things by Donald A. Norman

2. Affordance, Conventions, and Design by Donald A. Norman

3. Rediscovering Affordance: A Reinforcement Learning Perspective by Todi et al.

4. Affordance Learning for End-to-End Visuomotor Robot Control by Levine et al.

5. Technology Affordances by William W. Gaver