

Specialization Course

Aakash S. Mallik, Prof. Di Wu, Prof. Yushan Pan

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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