

# MAS ISW Assignment 2

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## **Task 1: Extract keywords from "Readings in Robot Architecture"**

- Conceptual architecture
  - control architecture
  - telerobot
  - reference model architecture
  - Supervision
  - fault detection
  - fault recovery
  - situation-driven
  - behavior-based
- Functional architecture
  - hierarchical
  - layered
  - realtime
  - hybrid system
- Software architecture
  - toolkit
  - framework
  - asynchron
  - dsl
  - reactive
  - middleware
- Hardware architecture

- robot navigational system
- detection
- diagnosis
- environments
  - dynamic
  - indoor
- mobile robots
- paper type
  - background
  - survey
- driving

## Task 2: Structure of survey paper "Gross Motion Planning" [1]

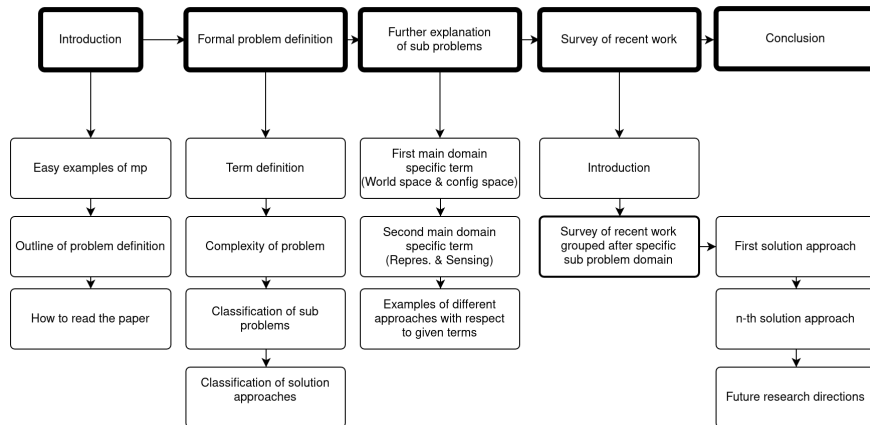


Figure 1: My approach for visualizing the structure

### Task 3: Special Terms

**glossary** "A list of often difficult or specialized words with their definitions, often placed at the back of a book." [2]

**taxonomy** "An ordered arrangement of groups or categories." [3]

**ontology** "The branch of metaphysics that deals with the nature of being." [4]

#### Ontology

Why is Ontology the best word:

- Ontology describes the art of creating categories at a very deep level.
- Includes taxonomy and glossary

Description: "(Computers) A systematic arrangement of all of the important categories of objects or concepts which exist in some field of discourse, showing the relations between them. When complete, an ontology is a categorization of all of the concepts in some field of knowledge, including the objects and all of the properties, relations, and functions needed to define the objects and specify their actions. A simplified ontology may contain only a hierarchical classification (a taxonomy) showing the type subsumption relations between concepts in the field of discourse. An ontology may be visualized as an abstract graph with nodes and labeled arcs representing the objects and relations." [5]

### Task 5: Mindmap of the keywords

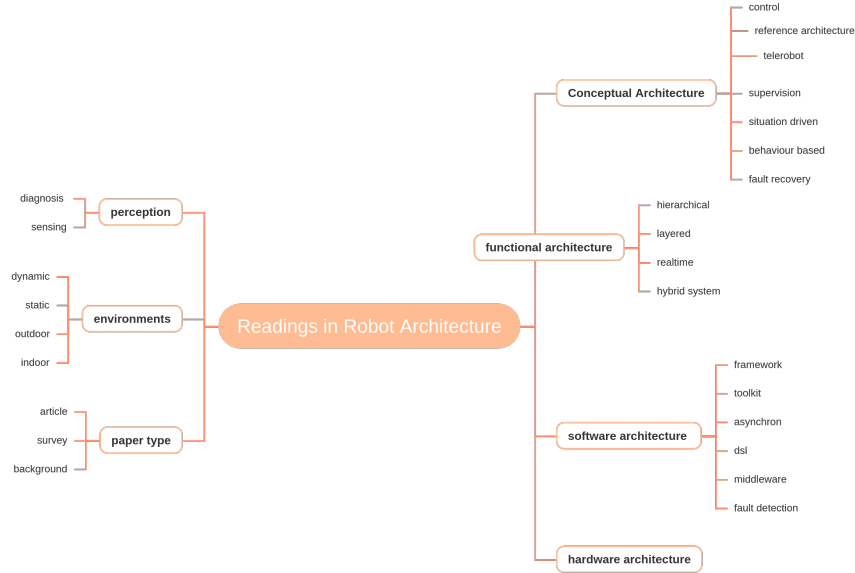


Figure 2: Mindmap over the keywords.

## References

- [1] Y. K. Hwang and N. Ahuja, “Gross motion planning—a survey,” *ACM Comput. Surv.*, vol. 24, p. 219–291, Sept. 1992.
- [2] Wordnik, “Definition glossary.” <https://www.wordnik.com/words/glossary>, November 2020. Accessed on 15.11.20.
- [3] Wordnik, “Definition taxonomy.” <https://www.wordnik.com/words/taxonomy>, November 2020. Accessed on 15.11.20.
- [4] Wordnik, “Definition ontology.” <https://www.wordnik.com/words/ontology>, November 2020. Accessed on 15.11.20.
- [5] PJC, “Definition ontology.” <https://gcide.gnu.org.ua/?q=Ontology&db=gcide&define=1>, November 2020. Accessed on 16.11.20.