

# Advanced Search in Chess



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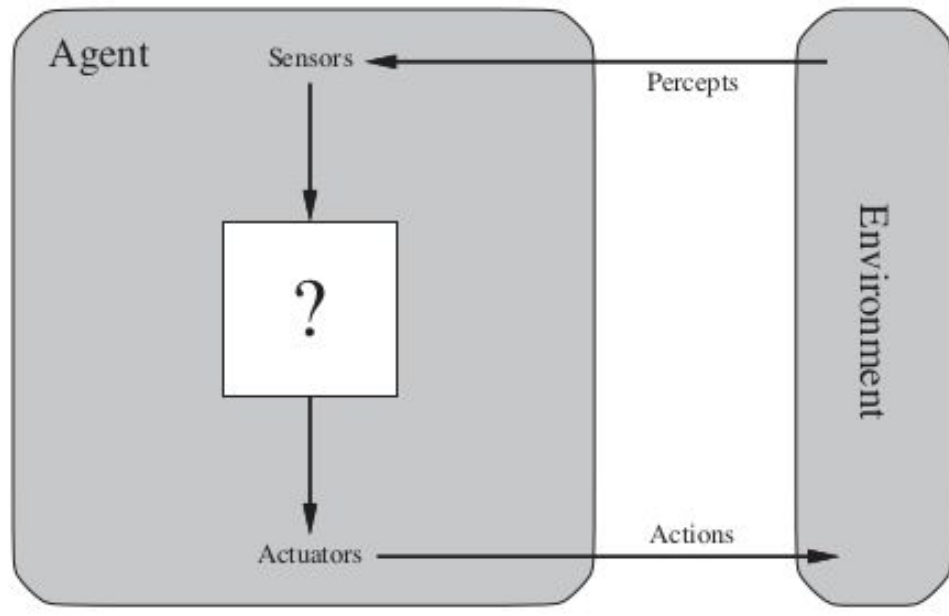
The background features a black and white photograph of palm fronds. Two solid teal rectangular blocks are overlaid on the image: one on the left containing the text, and one on the right. The text is in a bold, dark font.

# 1. Intelligent Agents

# What is an Intelligent Agent?

An agent is an entity that **perceives** its **environment** and it needs:

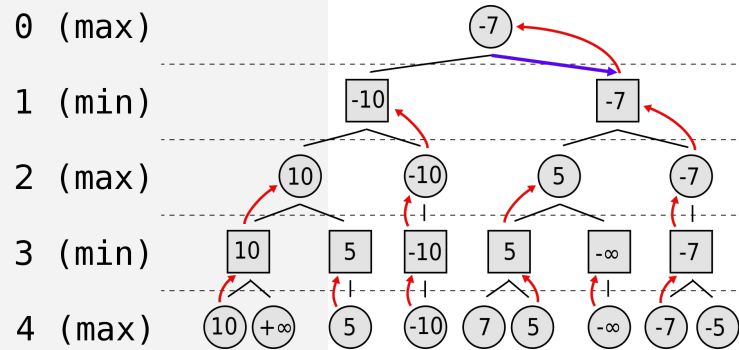
- Sensors, to perceive the environment
- Actuators, to emit a response based on its perception



Agent Interaction. Retrieved from the book *AI a modern approach* by Russell and Norvig.

The background of the slide features a black and white photograph of palm fronds. Two solid teal-colored rectangular blocks are overlaid on the image: one on the left containing the title, and one on the right. The title text is in a bold, dark font.

## **2. Advanced Search: Minimax**









## What is Minimax?







- Algorithm that minimizes the maximum loss.
- The algorithm recursively traverse its child nodes looking for the optimal state.
- It needs an **utility** function to measure the values of each state.

The background features a black and white photograph of palm fronds. Two solid teal rectangular blocks are overlaid on the image: one on the left side and one on the right side, both partially obscuring the palm leaves.

# **3. Chess**



	10
	30
	30
	50
	90
	900

	-10
	-30
	-30
	-50
	-90
	-900

## How to weight a chess table?

Sum the weight of the pieces that are present in the table in the current state given the equivalences shown in the left table.

p.d.: This is our **utility** function.

**Demo**

# Thanks!

questions?

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# References

- AI a modern approach. Third Edition. Russell & Norvig.
- A step-by-step guide to building a simple chess AI. Retrieved from <https://www.freecodecamp.org/news/simple-chess-ai-step-by-step-1d55a9266977/>