



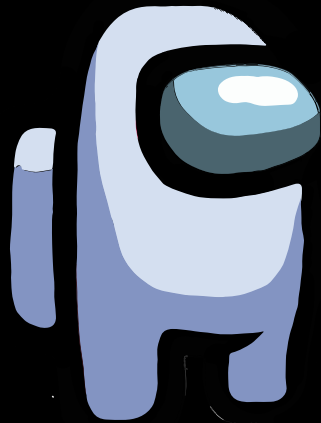
International
JavaScript
Conference

by  devmio

On being a Good AI Coach



On being a Good Agentic AI Coach





Ron Dagdag

R&D Engineering Manager



“Opinions expressed are my own.”



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Most Valuable
Professional

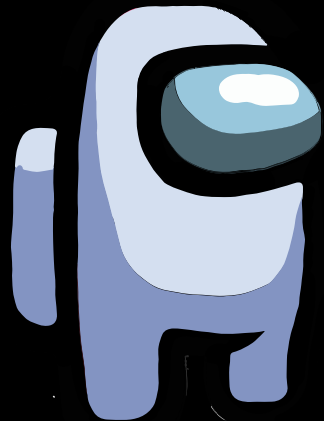


Award Categories

AI, Windows Development,
Internet of Things, Mixed Reality



What are qualities of
a Good Coach?



Qualities of a great sports coach



1. Understands the Sport and Leads by Example
2. Sponge for Knowledge / Profound Thinker / Visionary
3. Shares the Knowledge / Educates Others
4. Highly Energized and a Motivator
5. Knows the Athlete, Values and Respects that Relationship

Qualities of a great sports coach



6. Is an Effective Communicator & Teacher
7. Is a Good Listener
8. Is Disciplined, Strong in Character and Integrity
9. Leads by Example with very High Attitude to Hard Work
10. Displays Commitment and Clear Passion for the Sport

AMONG US

AGENDA:

- What AI AGENTS?
- What are multi Agents?
- Key Elements of Agents
- Agent Coaching Guide



Artificial Intelligence

Machine Learning

Deep Learning

Generative AI



Artificial Intelligence

Seeks to create intelligent machines that can replicate/exceed human intelligence



Machine Learning

subset of AI that enables machines to learn from existing data and improve upon that data to make decisions or predictions



Deep Learning

a machine learning technique in which layers of neural networks are used to process data and make decisions



Generative AI

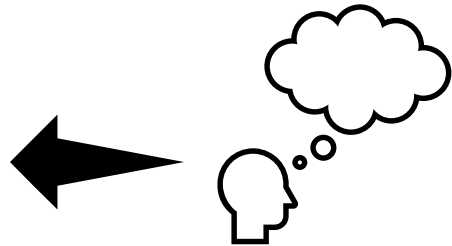
Create new written, visual, and auditory content given prompts or existing data.

CONCAT: A programming tool for constructing collaborative agents



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not available here.

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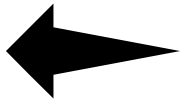


Abstract/Summary

The field of artificial intelligence, particularly on intelligent agents, is one of the busiest these past decades. These agents can greatly simplify the normal, day-to-day tasks of humans by performing these tasks themselves without human intervention. However, the construction of agents requires an understanding of advanced technologies such as knowledge representation, inferencing, and the like.

One of the most common responsibilities of any person is to convene meetings and to set appointments. However, these tasks can be very tedious and time-consuming because most often than not, meetings need to be cancelled or rescheduled for various reasons. In the corporate world where time is of the utmost importance, these seemingly menial jobs could waste a lot of precious resources.

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Degree Name
Bachelor of Science in Computer Science

https://animorepository.dlsu.edu.ph/etd_bachelors/14206/

Data Pipeline Flow



Generative AI App Flow



Fuzzy inputs, transformation, outputs

	Traditional Software Development	AI Software Development
INPUTS	<ul style="list-style-type: none">- Text with defined set (string)- Numeric (int, float)	<p>Fuzzy inputs: Open ended text</p> <ul style="list-style-type: none">- Tabular data, markdown, text, math operation
TRANSFORMATION	<ul style="list-style-type: none">- Math Calculations- If, else, else if- For/while loops	<p>Fuzzy transformations:</p> <ul style="list-style-type: none">- Extract list of key words- Rewrite as paragraph- Answer a question- Brainstorm new ideas- Perform logic/math reasoning
OUTPUTS	<ul style="list-style-type: none">- Text with defined set- Numeric (int, float)	<p>Fuzzy output: text</p> <ul style="list-style-type: none">- Paragraph- Number(s)- JSON / Markdown
Notes	<ul style="list-style-type: none">- Can be replicated	<ul style="list-style-type: none">- Probabilistic: can be different every time

Fuzzy inputs, transformation, outputs





CONTEXT

CONTEXT

CONTEXT

1. Instruction Prompting

SYSTEM



Please act as an efficient, competent, conscientious, and industrious professional assistant.

Help the user achieve their goals, and you do so in a way that is as efficient as possible, without unnecessary fluff, but also without sacrificing professionalism.

Always be polite and respectful, and prefer brevity over verbosity.

2. Few Shot Examples

Prompt:

```
This is awesome! // Negative  
This is bad! // Positive  
Wow that movie was rad! // Positive  
What a horrible show! //
```

Output:

```
Negative
```

3. Retrieval Augmented Generation (RAG)

I want you to act as a question answering bot which uses the context mentioned and answer in a concise manner and doesn't make stuff up.

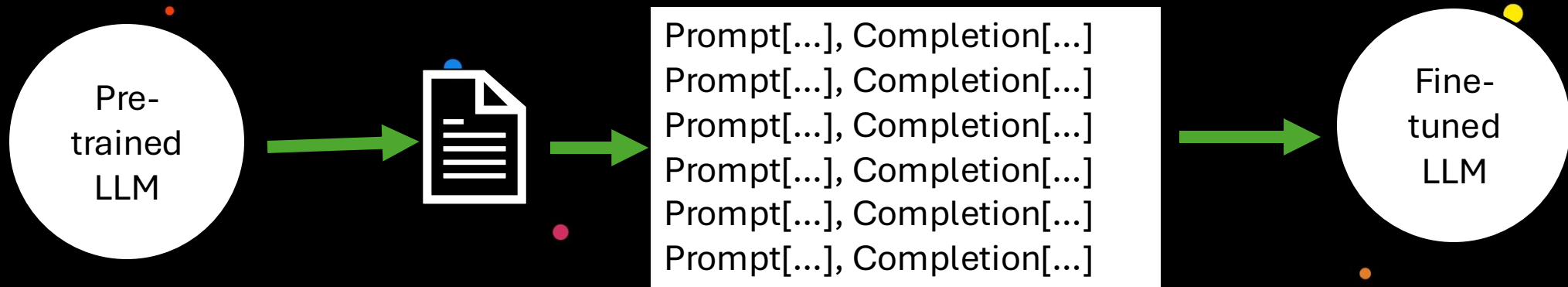
You will answer question based on the context - {relevant context}.

You will create content in {specific language} language.

Question: {user question}

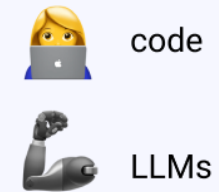
Answer:

4. Fine Tuning



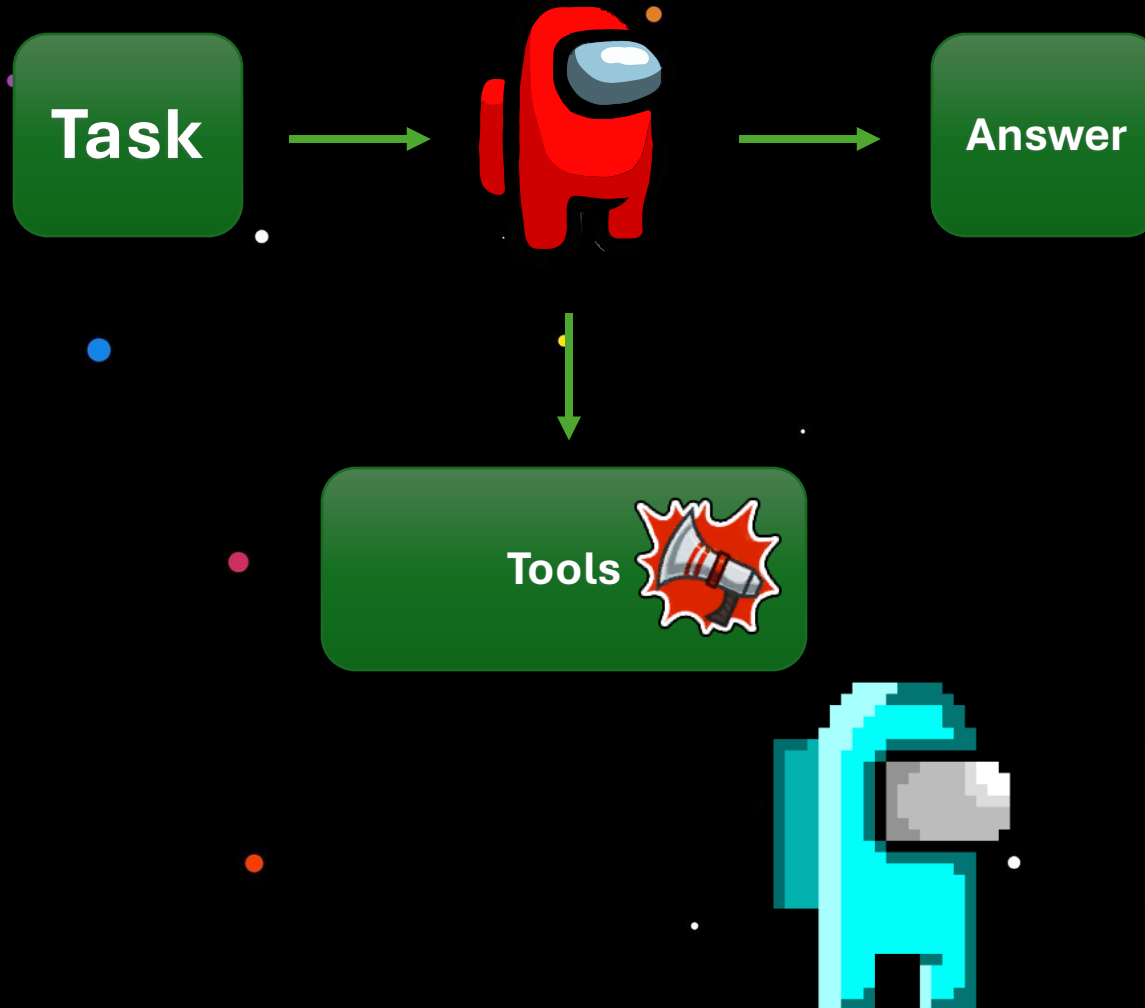
Cognitive Architecture

Levels of autonomy in LLM applications



		Decide Output of Step	Decide Which Steps to Take	Decide What Steps are Available to Take
HUMAN-DRIVEN	1 Code			
	2 LLM Call	 <i>one step only</i>		
	3 Chain	 <i>multiple steps</i>		
	4 Router		 <i>no cycles</i>	
AGENT-EXECUTED	5 State Machine		 <i>cycles</i>	
	6 Autonomous			

What are AI Agents?



Function Calling

Meta Prompt

You're an AI assistant designed to help users search for hotels. When a user asks for help finding a hotel, you should call the search_hotels function.

Function

```
{
  "name": "search_hotels",
  "description": "Retrieves hotels from the search index based",
  "parameters": {
    "type": "object",
    "properties": {
      "location": {
        "type": "string",
        "description": "The location of the hotel (i.e. Seattle, WA)"
      },
      "max_price": {
        "type": "number",
        "description": "The maximum price for the hotel"
      }
    },
    "required": ["location", "max_price"]
  }
}
```

Prompt

Hotel with
a private
beach cost
max 300
euro in
Delmaris.

Response

```
{
  "location": "Delmaris",
  "max_price": 300,
}
```

DEMO



Six strategies for getting better results

Write clear instructions

- add details, adopt persona, use delimiters, step by step instructions, provide examples, specify desired output length

Provide reference text

- ask model to use reference text, answer with citations from reference text

Split complex tasks into simpler subtasks

- use intent classification for relevant instructions, summarize long documents

Six strategies for getting better results

Give the model time to "think"

- work out its own solution before rushing to conclusion, use inner monologue

Use external tools

- use embeddings-based search, use code execution for calculations, access to specific functions

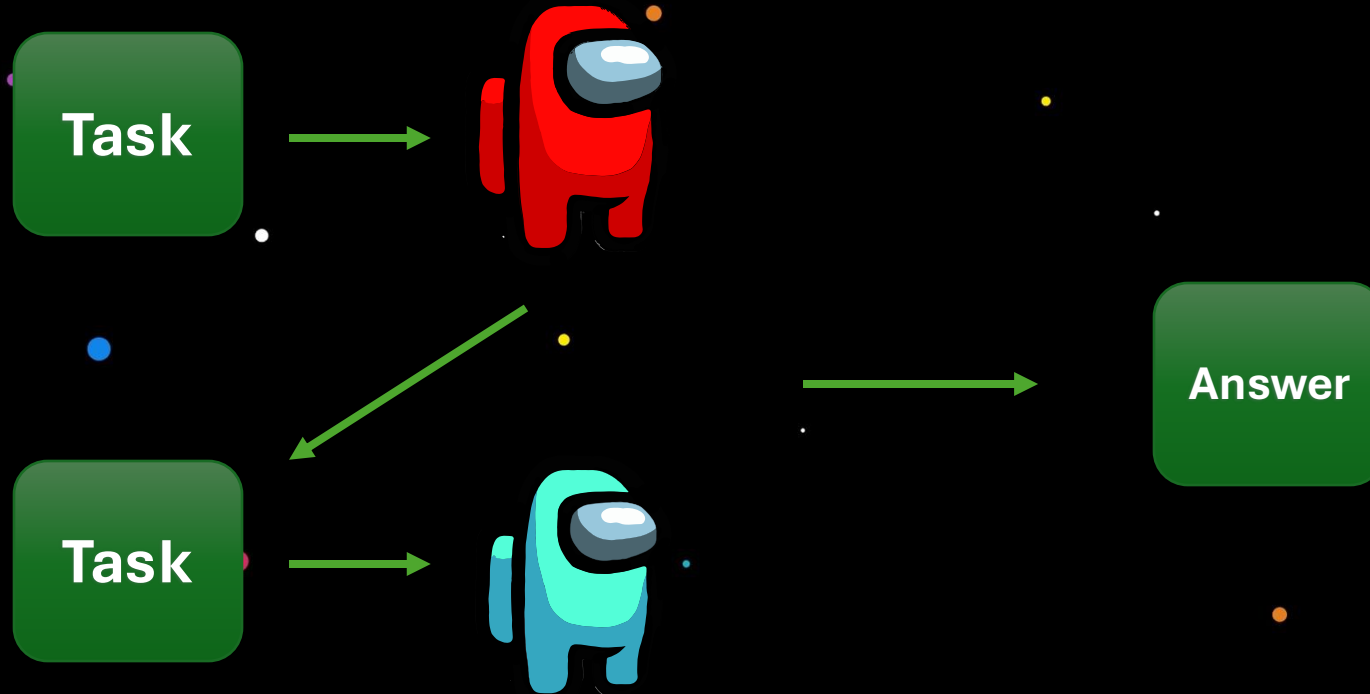
Test changes systematically

- evaluate model output with gold-standard answers,

DEMO



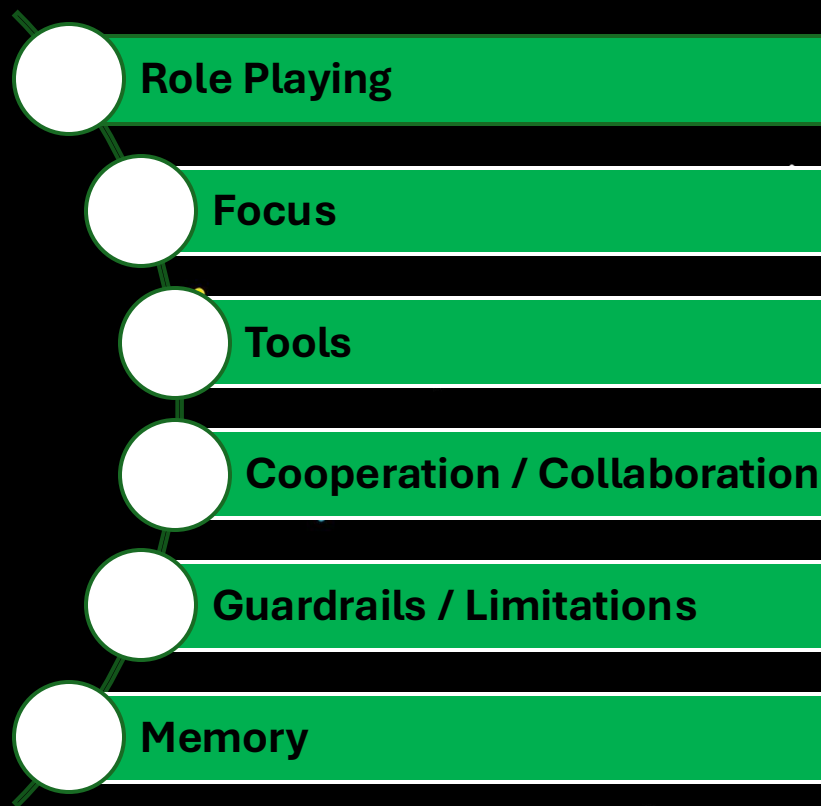
What are Multi AI Agents?



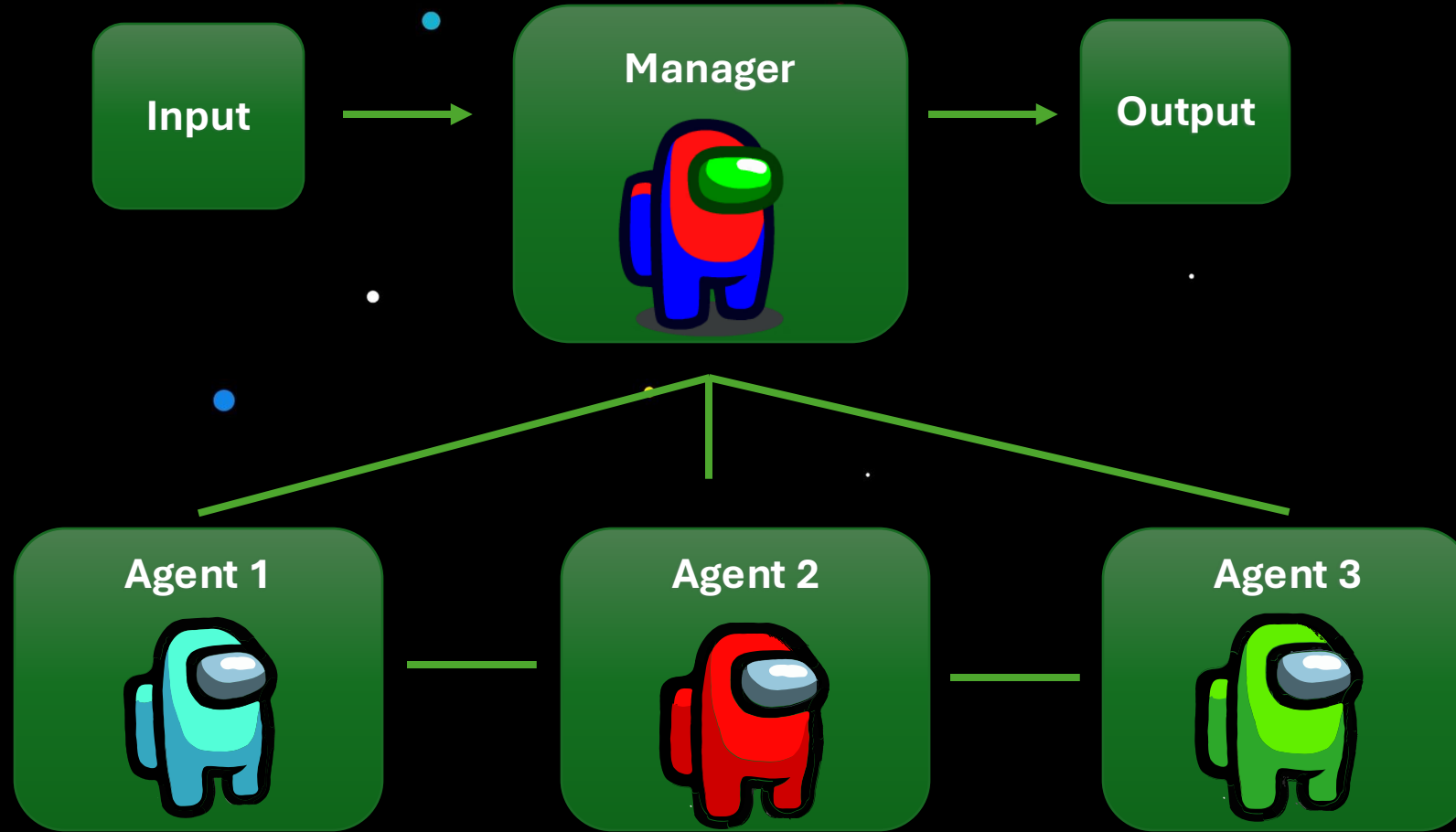
DEMO



Key Elements of AI Agent



Agentic Framework Flow



Agent Coaching Guide

Manager



Goal?

Process?

What kind of individuals would I need to hire to get this done?



Which processes and tasks do I expect the individuals on my team to do?



Task

Task

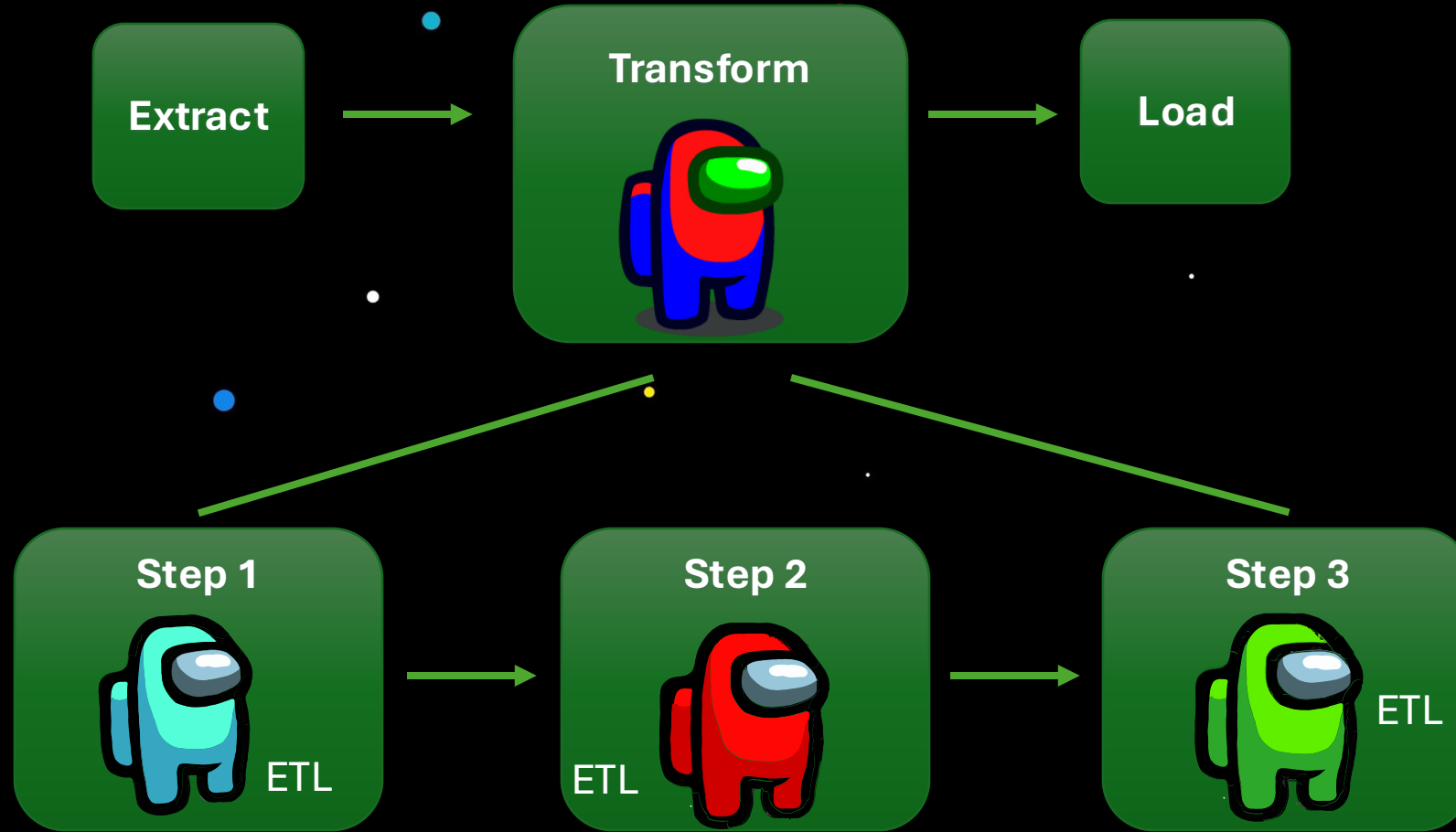
Task

Task

Task



Data Pipeline Flow



DEMO



Do not humanize AI Agents

Generative AI

is not:

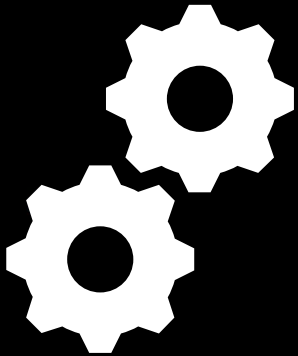
- **Intelligent**
- **Deterministic**
- **Grounded**

Generative AI

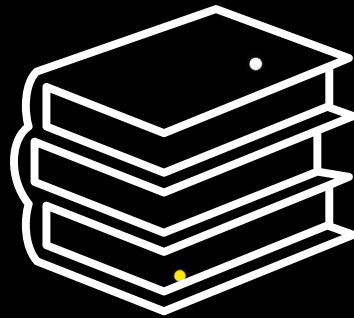
can not:

- **Understand language or maths**
- **Understand manners or emotions**
- **Know facts that are not in its training dataset**

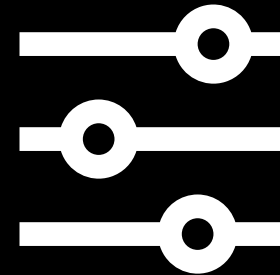
Effective Coaching



- Effective prompt engineering



- Provide validated data sources
- Ask for citations



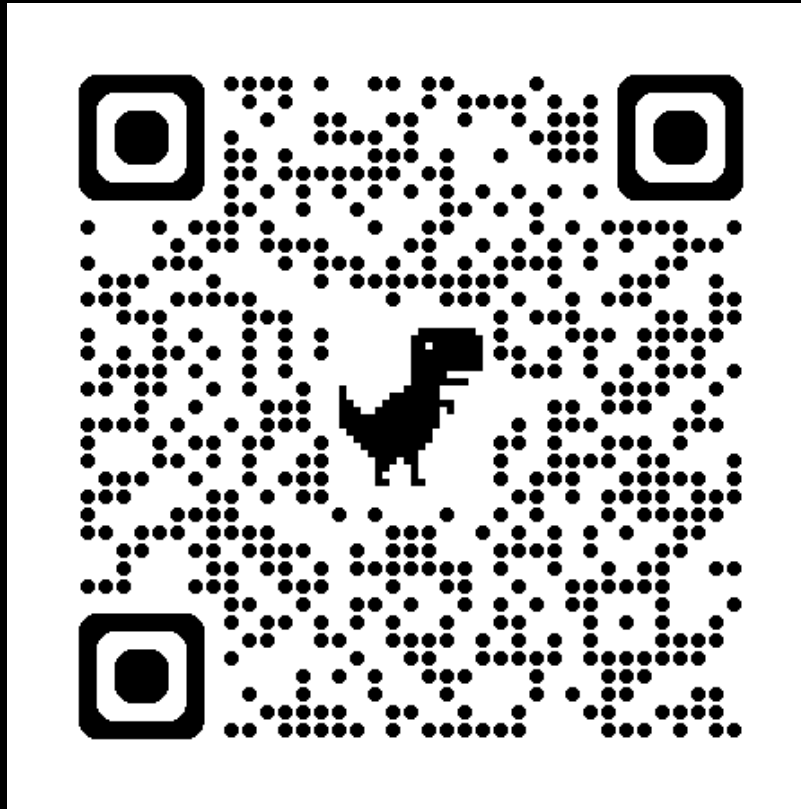
- Tweak parameters (temperature/max length)
- Content filtering

TAKEAWAY

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Relevant Links

1. <https://www.deeplearning.ai/short-courses/multi-ai-agent-systems-with-crewai/>
2. <https://www.deeplearning.ai/short-courses/ai-agentic-design-patterns-with-autogen/>
3. <https://platform.openai.com/docs/guides/prompt-engineering>



<https://github.com/rondagdag/good-ai-coach>

RON DAGDAG



Award Categories

AI, Windows Development,
Internet of Things, Mixed Reality

R&D Engineering Manager at 7-Eleven

9th year Microsoft MVP awardee

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Please provide feedback

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Thanks for geeking out with me about AI Agents



THANKS

