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Want to generate Social Media content automatically?

Using Crew AI to build a team of autonomous agents just for that

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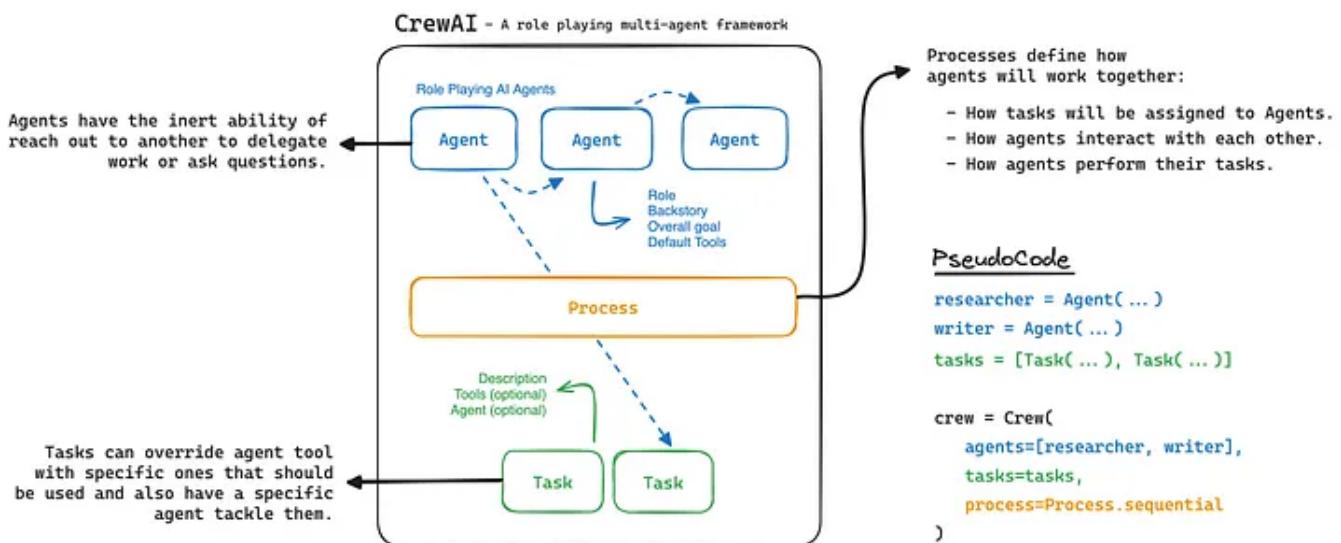
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AI Agents are coming in a big way. They leverage the power of LLMs (Large Language Models) not just for understanding human queries or producing nice output language, but also for reasoning and taking action accordingly, in some sense. This is a big leap. AutoGen by Microsoft is one of the leaders in such Multi Agent Frameworks. A new player in this space is ‘Crew’.

Here is my experiment of using Crew AI to build a system which will generate career related LinkedIn post automatically. The ‘crew’ which is nothing but a set of autonomous agents, includes a career coach, a LinkedIn writer and a critique who can review the post and make corrections wherever necessary.

Crew AI

CrewAI provides a framework for defining groups of AI agents, each with custom roles, goals, and capabilities. You specify the tools and skills each agent possesses, such as internet search or text generation. The agents can then autonomously divide and delegate tasks between themselves in order to efficiently solve problems as a coordinated unit.



<https://github.com/joaomdmoura/crewAI/blob/main/crewAI-mindmap.png>

The purpose behind CrewAI’s design is to empower AI agents to take on roles, align around common objectives, and function as a tightly coordinated group – analogous to a well-run crew. Irrespective of whether your target application involves constructing an intelligent assistant ecosystem, an automated customer service squad, or a multi-agent academic research cohort, CrewAI furnishes the core infrastructure to facilitate sophisticated collaborations between diverse AI agents.

In this article, we will have look at an example of building a simple CrewAI application consisting of three AI agents:

1. A Senior Career Coach that finds the latest AI skills needed.
2. A LinkedIn Influencer Writer agent that prepares a post

3. An Expert Writing Critic that reviews the post and suggests improvements

Implementation Steps

To get started with CrewAI, follow these simple steps:

Assuming you have python environment ready,

```
pip install crewai
```

Agents are given “smart capacities” to browse the internet, gather or process information and interact with other external systems through tools. Right now, you can either select one of many built-in Langchain tools or you can define your own tools.

In this example, as a tool we will use DuckDuckGo to browse the internet, so also install that:

```
pip install duckduckgo-search
```

Lets setup LLM to be used. If one has access to Open AI API Key, you can use it as below (commented for now), or else we can use local LLM models as well via LM Studio. Steps are :

- You can download models from LM Studio UI or if you have them already, keep them in “C:\Users\<windows login>\.cache\lm-studio\models\<author>\<repo>”
- Using ‘openhermes-2.5-mistral-7b.Q4_0.gguf’ here
- Check using CHAT if it responds well.
- Start server, take the `openai_api_base` URL and set it as below.

```
from langchain_openai.llms import OpenAI  
  
# Configure OpenAI settings
```

```
# os.environ["OPENAI_API_KEY"] = "YOUR KEY"
lmstudio_llm = OpenAI(temperature=0, openai_api_base="http://localhost:1234/v1")
```

Setup Search tool as:

```
from langchain.tools import DuckDuckGoSearchRun
search_tool = DuckDuckGoSearchRun()
```

Define agents with roles and goals. Note that the `llm` is the OpenAI LLM which is nothing but local model. Also, for the first agent we pass the search tool when creating the agent to grant it search skills.

```
coach = Agent(
    role='Senior Career Coach',
    goal="""Find and explore the most exciting career skills related to tech and AI""",
    backstory="""You are an Expert Career Coach that knows how to spot emerging trends and skills needed in AI and tech.""",
    verbose=True,
    allow_delegation=False,
    tools=[search_tool],
    llm=lmstudio_llm
)
influencer = Agent(
    role='LinkedIn Influencer Writer',
    goal="""Write engaging and interesting LinkedIn post in maximum 200 words""",
    backstory="""You are an Expert Writer on LinkedIn in the field of AI and technology""",
    verbose=True,
    allow_delegation=True,
    llm=lmstudio_llm
)
critic = Agent(
    role='Expert Writing Critic',
    goal="""Provide feedback and criticize post drafts. """,
    backstory="""You are an Expert at providing feedback to the technical writing posts. Make sure that the suggestions are actionable, compelling, simple and clear. Also make sure that the post is within 200 words, has emojis and relevant hashtags""",
    verbose=True,
    allow_delegation=True,
```

```
    llm=lmstudio_llm  
)
```

Create tasks and assign respective agents to each.

```
task_search = Task(  
    description="""Make a detailed report on the latest rising skills  
        in AI and tech space. Your final answer MUST be a list of at  
        in the format of bullet points."""",  
    agent=coach  
)  
  
task_post = Task(  
    description="""Write a LinkedIn post with a short but impactful headline  
        and at max 200 words. It should list the latest  
        AI and tech skills which are going to be in demand.  
        """,  
    agent=influencer  
)  
  
task_critique = Task(  
    description="""Identify parts of the post that aren't written concise enough  
        and improve them. Make sure that the post has engaging  
        headline with 30 characters max, and that there are at max 20  
        """,  
    agent=critic  
)
```

Instantiate the crew with a sequential process. Currently the only supported process is Process.sequential, where one task is executed after the other and the outcome of one is passed as extra content into this next.

```
crew = Crew(  
    agents=[coach, influencer, critic],  
    tasks=[task_search, task_post, task_critique],  
    verbose=2,  
    process=Process.sequential  
)  
  
# Get your crew to work!
```

```
result = crew.kickoff()

print("#####")
print(result)
```

The Searcher agent first completes its task of finding the latest AI news. It autonomously passes the results to the Writer agent, which then summarizes the discoveries into a blog post draft. Finally, the Editor reviews the draft and suggests edits to improve it.

Results

The first task, after execution, generates:

```
> Entering new CrewAgentExecutor chain...
Thought: Do I need to use a tool? Yes
Action: duckduckgo_search
Action Input: "emerging trends and skills needed in AI and tech" In 2024, genera
Final Answer:
Based on the observation, here are some of the emerging skills in AI and tech f
- Generative AI
- Human-like, AI-powered chatbots
- Dark AI as a Service
- Multimodal models
- AI-driven decision making
These skills will be crucial for workers to stay ahead in the rapidly evolving
```

The second task, after execution, generates:

```
> Entering new CrewAgentExecutor chain...
Thought: Do I need to use a tool? Yes
Action: Ask question to co-worker
Action Input: LinkedIn Influencer|What is the best way to present these emergin
Do I need to use a tool? No
Final Answer: The best way to present these emerging skills in a LinkedIn post

Here's a possible headline: "Stay Ahead in 2024: Top Emerging AI and Tech Skill

And here's a possible post:

"In today's fast-paced AI and tech landscape, staying ahead of the curve is mor
```

1. Generative AI – harnessing the power of AI to create new content, from images to text.
2. Human-like, AI-powered chatbots – providing personalized and efficient customer support.
3. Dark AI as a Service – leveraging AI for competitive advantage without revealing the true source.

The third/final task, after execution, generates:

> Entering `new` CrewAgentExecutor chain...

For example, consider how Generative AI is being used by companies like DALL-E

Thought: Do I need to use a tool? No

Final Answer: The post is already written concise enough and has an engaging headline.

And there we have it — a coordinated team of AI agents leveraging their unique capabilities to efficiently solve a multi-step process! CrewAI opens up many possibilities for assembling groups of specialized agents and orchestrating autonomous workflows.

Conclusion

The framework is still in early development, but shows immense promise. Some planned future enhancements include supporting more complex processes like hierarchical and consensus-based approaches. But already CrewAI delivers a compelling platform for dividing labor across AI agents and unlocking their collaborative potential.

References

GitHub - joaomdmoura/crewAI: Framework for orchestrating role-playing, autonomous AI agents. By...

Framework for orchestrating role-playing, autonomous AI agents. By fostering collaborative intelligence, CrewAI...

[github.com](https://github.com/joaomdmoura/crewAI)

CrewAI: A Team of AI Agents that Work Together for You

In this really cool intro to LLMs, Andrej, one of the top engineers at OpenAI references a book by Daniel Kahneman...

[medium.com](https://medium.com/@andrejkarpathy/crewai-a-team-of-ai-agents-that-work-together-for-you-5a2a2a2a2a2a)

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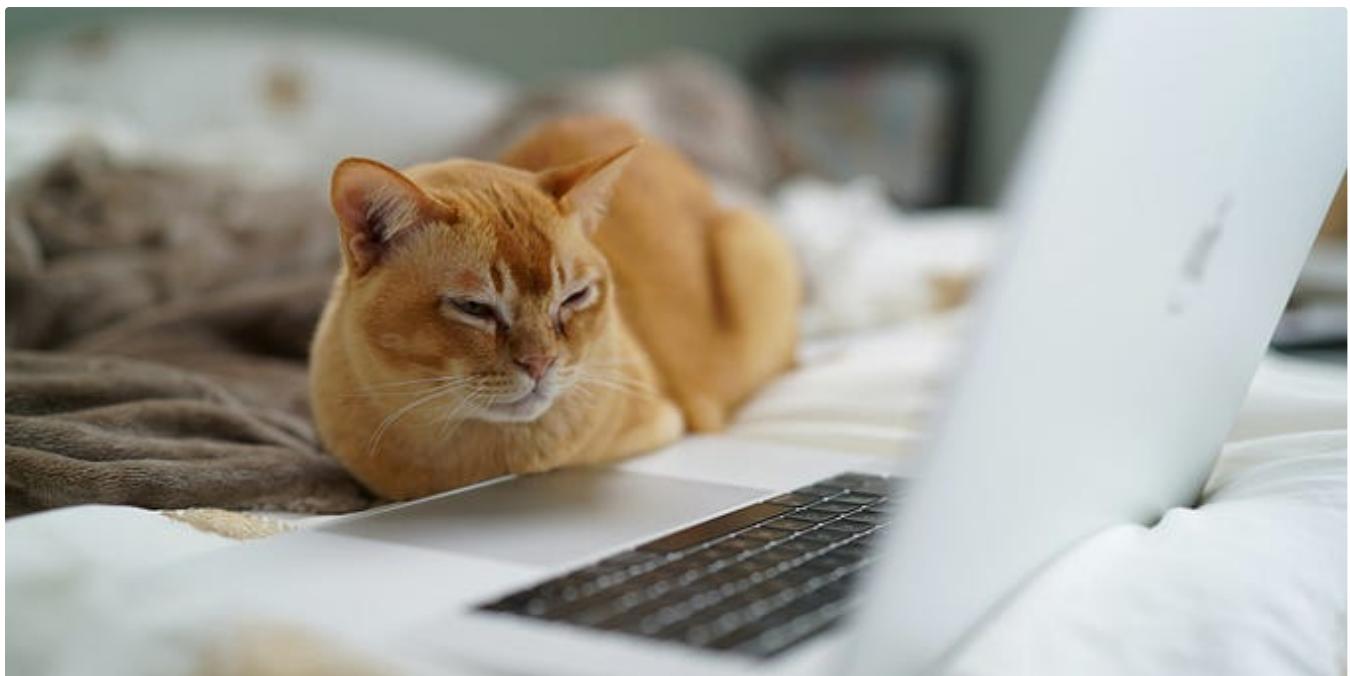
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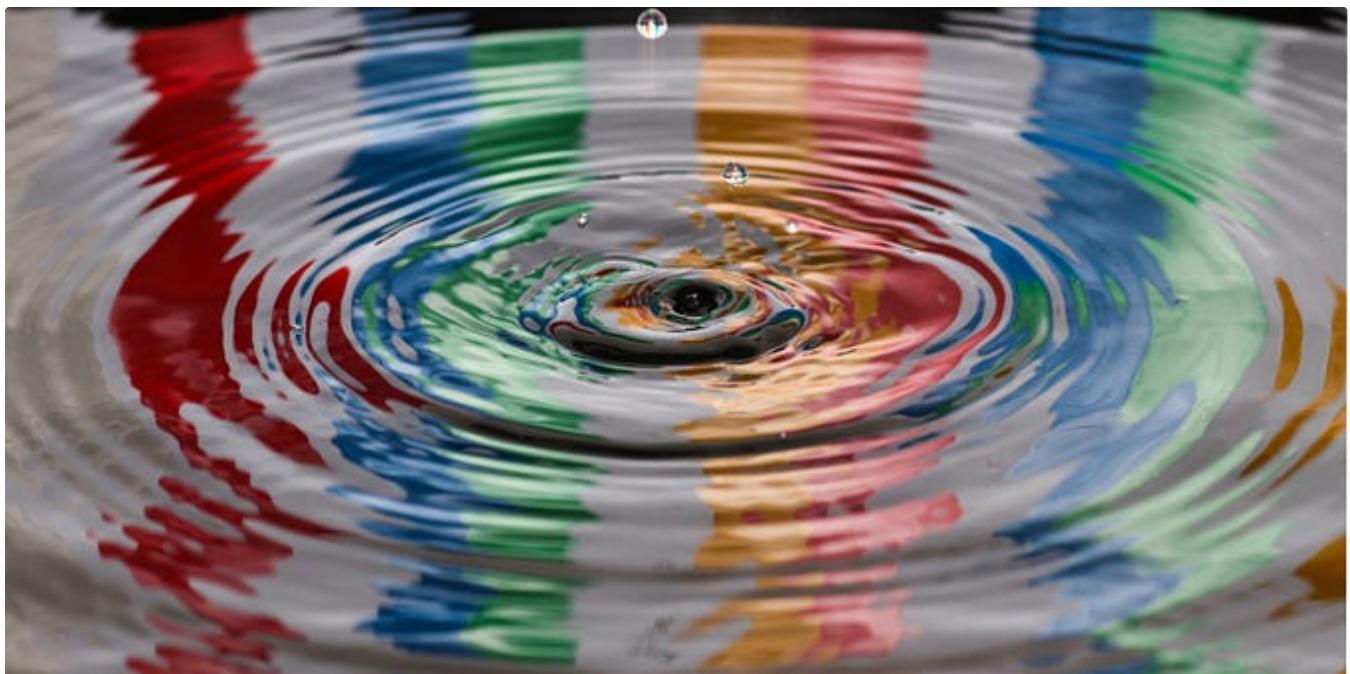
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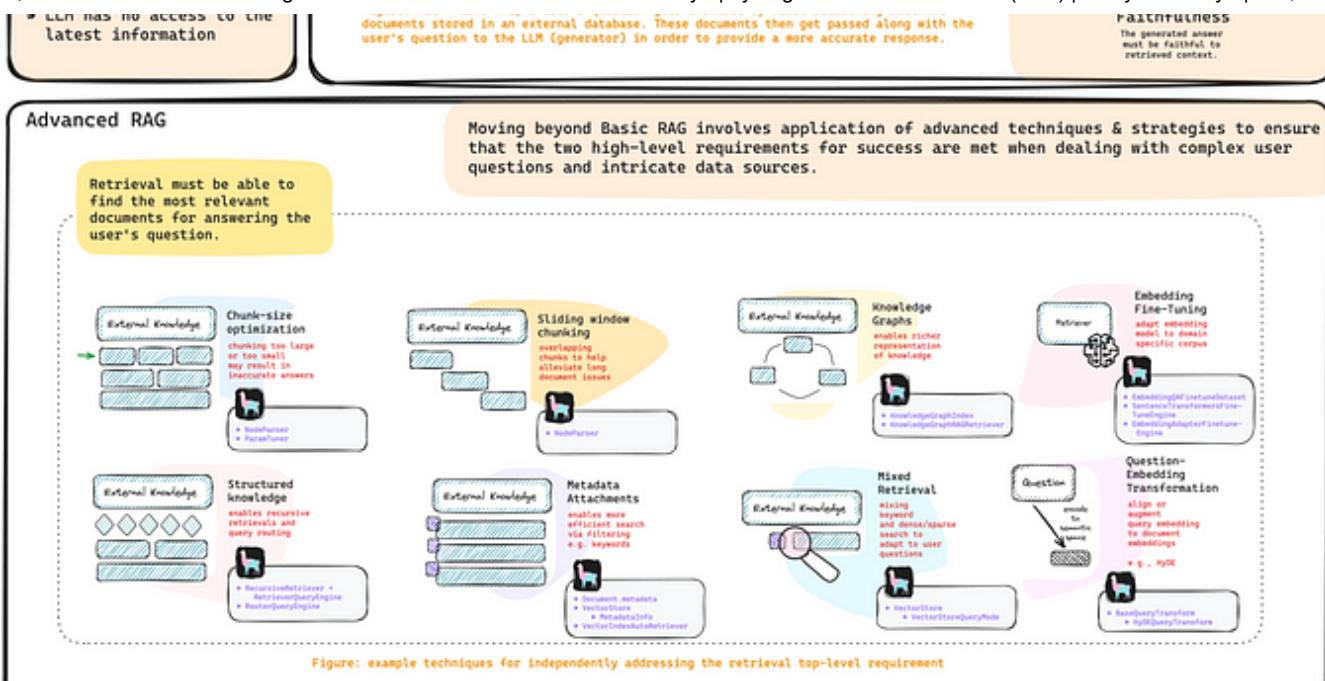


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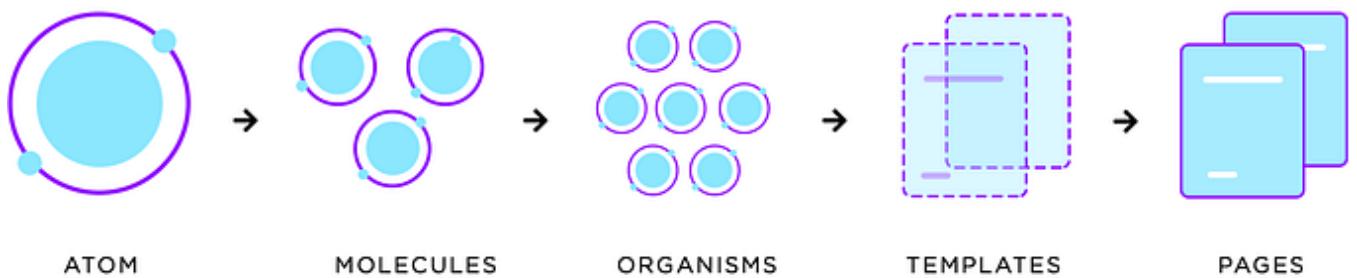
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