



**TECHNOLOGY FEATURE** Artificial Intelligence / Research Communication / Emerging Technology

# From Generative AI to Agentic AI: The Next Evolution of Artificial Intelligence

*We have already taught machines how to talk, write and even thinks creatively - now we are teaching them how to actually do things on their own this is not just another step forward; it is a big change in how these system can help us in real life and make things easier.*

By **Muhammad Umar** | BS Computer Science, 6th Semester | Published: May 2025

Position: AI & Agentic Systems Researcher | Specialisation: AI Agents, LLM-based Systems

## Introduction

Not too long ago, asking a computer to write a proper paragraph felt almost impossible. Then tools like ChatGPT and Gemini came along and changed everything very quickly. Suddenly, Computers could write essays, create code, make poetry, and even have meaningful conversations. In Pakistan, from startups in Karachi to developers in Lahore, everyone rushed to used these tools and there was a lot of excitement.

***“Generative AI answers your questions. Agentic AI goes out and solves your problems — on its own.”***

## What is Generative AI — and Why Isn't It Enough?

Generative AI simply means tools that create content when you give them an output. Models like GPT-4 or Claude are trained on huge amount of data, so they learn patterns in language and can guess what comes next. Because of this, they can write, translate, summarize, and even help solve problems in a very natural way.

But they still have a basic limitations. They mostly work one step at a time - each request starts fresh. They don't go off and complete tasks on their own, like browsing the internet for you, booking something, running a program, or checking your emails and finishing the job. They can give answers but they don't actually carry out actions. And in real life, that difference between just answering and actually doing something matters a lot.

*Figure 1: A visualisation of the layered neural architecture underlying modern agentic AI systems — where autonomous agents perceive, plan, and act across interconnected nodes. Credit: Muhammad Umer / PakTech Today*

## Enter Agentic AI: A New Paradigm

Agentic AI is what you get when these systems are not just answering questions but actually doing tasks on their own. Instead of giving one reply, they can take a big goal, break it into smaller steps, use tools like (searching online or running code), check their progress, fix mistakes and keep going until the work is finished. In simple terms, they don't just think - they plan, act, and adjust.



A simple way to understand it: normal AI is like a smart advisor who also does the work for you - sending messages, completing tasks, and giving you the final results without needing constant instructions. Tools like LangChain, AutoGen, CrewAI, and APIs from Anthropic are already helping developers build these kinds of systems.

At the core, these systems follow a simple cycle: they look at the situation, decide what to do, take action, check the result and repeat until the task is done. Unlike regular AI that answers once and stops, these systems can remember things, manage ongoing tasks, and work over a longer time. Some can even create multiple smaller helpers to work together at the same time, almost like a team, to handle bigger and more complex problems.

## Key Findings & Real-World Impact

---

The numbers show how big this shift really is. Research from McKinsey suggests that AI agents could automate up to 70% of routine knowledge-based tasks in coming years. Early adopters in software engineering are already reporting that agentic coding tools - like GitHub Copilot Workspace and Devin — can compress multi-day development cycles into hours. This isn't just a small improvement - it's a huge jump in productivity. For Pakistan's fast growing freelance tech economy — over 1.5 million freelancers strong and growing — this is both a challenge and an extraordinary opportunity. Developers who understand how to build, orchestrate, and deploy agentic systems will command premium rates on global platforms. Right now is the best time to learn and build skills in this area.

***“For Pakistan’s 1.5 million-strong freelance tech workforce, agentic AI is not a threat — it’s the biggest skill premium on the horizon.”***

## What's Next?

---

The future is exciting, but it also comes with challenges. Systems that can act on their own bring important questions. How do we make sure they stay safe when they can access real tools and systems? How do we keep human control when decisions are being made so quickly? These are real issues, and experts are already working on solutions like testing in safe environment, adding approval steps, and making AI decisions easier to understand.

Moving from generative AI to agent-based systems isn't about replacing old technology - it's more like the next level. The tools we used today will become the base for more advanced systems tomorrow. For students, developers, and entrepreneurs in Pakistan, this is a great time to start learning. Try using agent tools, understand how they work, make mistakes, and improve. The world is changing fast, and this is a chance to grow with it.

### About the Author

Muhammad Umer is a BS Computer Science student in the 6th semester with a deep focus on AI agents and modern AI systems. He has spent a lot of time learning and experimenting with multi-agent tools, smart AI systems and how these technologies are evolving. His work sits at the intersection of practical software engineering and cutting-edge AI research, and he is passionate about bringing these technologies to Pakistan's developer community.

**Keywords:** Agentic AI; Generative AI; Large Language Models; AI Agents; Autonomous Systems; Pakistan Tech; LangChain; Multi-Agent Orchestration



## References

---

- [1] Chase, J. & Wills, H. (2024) *LangChain AI Agents in Action*, Manning Publications.
- [2] McKinsey Global Institute (2024) *The Next Frontier of AI: Agents and Automation*, McKinsey & Company. Available at: [www.mckinsey.com](http://www.mckinsey.com)
- [3] Anthropic (2024) *Building Effective Agents*, Anthropic Research Blog. Available at: [www.anthropic.com/research](http://www.anthropic.com/research)