

13-year-old Hyderabad student deveops multi-system AI architecture

Raja Dharma Tej Maddala develops a unique artificial intelligence framework designed for multi-perspective reasoning and collaborative decision-making



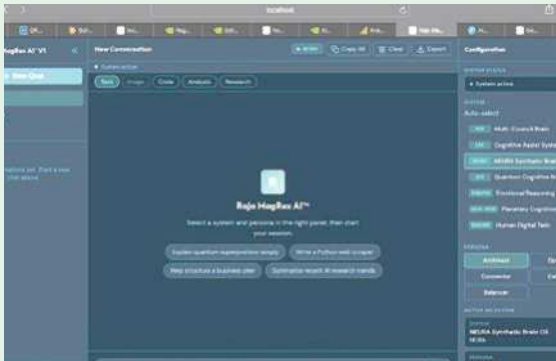
ARTI ADKE

IN an unusual example of young innovation, a 13-year-old student from Hyderabad has designed an artificial intelligence ecosystem that is attracting attention in technology and research circles. Raja Dharma Tej Maddala, a Grade 7 student, has developed an original AI framework called Raja MagRex AI™, which has been recognised as an innovation initiative by the Government of India's Department for Promotion of Industry and Internal Trade (DPIIT). At an age when most students are just beginning to explore coding and basic digital tools, Raja is attempting to rethink how artificial intelligence systems can be structured and coordinated.

Raja, who studies in the IB Middle Years Programme at Oakridge International School,

Gachibowli, describes himself as a technology enthusiast with a deep interest in artificial intelligence, science and complex systems. His curiosity about how mathematics, computing and scientific ideas connect with each other gradually led him to explore artificial intelligence more seriously. This interest eventually resulted in the creation of Raja MagRex AI™, an AI ecosystem designed around a structured architecture rather than a single model. According to Raja, the system is built on 22 cognitive systems, 87 modules and more than 100 functional features. The aim is to allow the system to examine problems from multiple analytical perspectives before producing a final response.

The project introduces a concept he calls "Artificial Civilisation Intelligence."



The idea is inspired by how human societies solve complex problems. In the real world, experts from different fields such as science, engineering, economics and policy often collaborate to reach better decisions. Raja's framework attempts to replicate this model within an AI environment, where multiple reasoning systems analyse an issue simultaneously and contribute to a unified conclusion.

At the centre of the architecture is a

coordination system called NEURA, which manages how the different cognitive modules interact with each other. When a problem or prompt is introduced, NEURA analyses it and determines which reasoning systems should be activated. These systems may focus on areas such as logical reasoning, contextual understanding, analytical evaluation or creative exploration. Their outputs are then combined through a structured synthesis process to produce a final response.

Unlike many current AI tools that rely on a single large model to generate answers directly from prompts, Raja's framework emphasises structured reasoning and collaborative analysis. The architecture allows different reasoning pathways to examine the same problem before arriving at a conclusion, which he believes could make AI systems more transparent and easier to interpret.

Building the system while continuing regular school responsibilities was one of the biggest challenges, Raja said. Balancing classes, assignments and examinations while working on research and system design required careful time management and discipline.

Much of the work involved not just coding but also conceptual thinking about how

different systems should interact and how reasoning should flow across the architecture.

Despite the challenges, Raja continued refining the concept and developing the structure of the AI ecosystem. He is currently working on Version 1 of Raja MagRex AI™, focusing on integrating the core systems and modules and preparing the framework for real-world testing.

The next stage will involve deploying the system to observe how different cognitive modules collaborate in practical scenarios. This phase will help improve the orchestration logic and refine the coordination between different reasoning systems.

In the long term, Raja hopes to expand the architecture by adding more advanced modules and exploring applications in research,

decision analysis and complex problem-solving. He believes that structured AI systems could help individuals and organisations examine complicated challenges from multiple perspectives before making decisions.

As artificial intelligence becomes more deeply integrated into everyday life, Raja says the goal should be to develop systems that support human thinking rather than replace it.

His vision is for AI to function as a collaborative tool that works alongside human reasoning, helping people analyse information more clearly and make better-informed decisions.

Examples of how it helps solve problems

For example, if a city wants to reduce air pollution, the system can study pollution sources, traffic patterns, weather conditions and policy options before suggesting balanced solutions such as improving public transport or regulating emissions.

In education, if a student faces a difficult scientific question, the AI can break the problem into smaller steps, examine different theories and explain possible solutions. By combining these viewpoints, the system helps users understand the problem better and arrive at more thoughtful and practical solutions.



How 3D helps students develop creativity, problem-solving and design thinking

Three-dimensional (3D) technology is transforming the way students learn, create and explore ideas. From 3D modelling software to 3D printers, these tools allow students to move beyond textbooks and turn their imagination into real, physical objects. By doing so, 3D technology plays an important role in developing creativity, problem-solving skills and design thinking among young learners.

One of the most exciting aspects of 3D technology is that it encourages students to think creatively. Instead of only drawing ideas on paper, students can design objects in a digital environment and then print them as real models. Whether it is building a miniature bridge, designing a science project model, or creating an artistic sculpture, students learn to experiment with shapes, structures and ideas in new ways.

3D technology also strengthens problem-solving abilities. When students design a model, they must think carefully about how the parts fit together, how strong

the structure will be and whether the design will work in real life. If something does not work during printing or assembly, they need to analyse the issue, adjust the design and try again. This process teaches them to learn from mistakes and improve their solutions.

Another important benefit is the development of design thinking. Students learn to approach problems step by step: first identifying a challenge, then creating possible solutions, testing prototypes and refining their designs. This method is widely used in engineering, architecture and product design.

By combining creativity with technology, 3D tools help students become active creators rather than passive learners. As schools introduce more hands-on learning methods, 3D technology is becoming a powerful way to encourage curiosity, innovation and practical learning. Through designing, testing and improving their ideas, students gain skills that are valuable for future careers in science, engineering, art and technology.

Speaking up to inspire and share ideas

Speech is one of the most powerful tools human beings possess. Through spoken words, people can express thoughts, share knowledge, inspire change and build meaningful connections. The ability to speak confidently and clearly allows individuals to communicate their ideas effectively and influence the world around them. Speaking is not only about delivering information; it is about encouraging dialogue and creating understanding. When people share

their ideas openly, they invite others to think, question and contribute. In classrooms, workplaces and communities, conversations often lead to innovation and collaboration. Many great movements and breakthroughs in history began with someone having the courage to speak up and share a vision. The power of speech also lies in its ability to motivate and uplift others. A few encouraging words can boost confidence, help someone overcome

challenges and inspire them to pursue their goals. Leaders, teachers and mentors often use speech as a way to guide and empower others. By communicating clearly and thoughtfully, they create environments where ideas are valued and voices are heard. Learning to speak effectively is an important life skill. It involves not only choosing the right words but also listening to others with respect and openness. Confidence in speaking develops with practice—through

discussions, presentations, storytelling and everyday conversations. When individuals feel comfortable expressing their thoughts, they become more engaged participants in society. Speech also strengthens creativity and critical thinking. Sharing ideas allows them to grow, evolve and improve through feedback and collaboration. When people speak and listen with curiosity and respect, they create opportunities for learning and collective progress.



Words have the power to encourage, connect minds, and turn ideas into action

Tips to crack the class XII Economics board exam

Preparing for the Class XII Economics board examination requires a clear strategy, regular practice and strong conceptual understanding. Many students study hard but still lose marks due to avoidable mistakes, poor time management or lack of structured revision. Analysing mistakes, practising sample papers consistently and following a clear revision plan can help improve both accuracy and confidence. The following practical tips can help students prepare effectively and perform well in the Economics board examination.

- General Tips**
- By now, most students would have attempted two pre-board examinations. Carefully evaluate your mistakes, identify recurring errors and clearly mark the chapters or topics where you are weak. Begin your revision with these weaker areas and practise related questions alongside.
 - While revising the syllabus, do not stop solving sample papers thinking you will attempt them after completing revision. Over the next two months, try to solve one sample paper every two days. For Economics, analyse your mistakes in each paper and maintain a separate



notebook to record them. Revisiting these errors regularly will help you avoid repeating them.

- Practise a wide variety of questions, including objective questions, case-based questions and numericals. Avoid skipping any section during preparation.
- Go through at least the last five years of official sample papers and previous year questions. Read each question carefully, frame answers mentally and verify them using the marking scheme. Solve all MCQs and numericals thoroughly and keep a

record of your mistakes.

- Practise case-study based questions from the official question bank as they are often included in the board examination pattern.
- Plan your revision by working backwards from the exam dates. Decide how many days you will dedicate to each subject and set a target number of sample papers to practise before the exam.

Macroeconomics Tips

- Conceptual clarity is essential in Macroeconomics. First revise each chapter thoroughly and then

practise all related questions, especially numericals.

- Maintain a separate list of graphs chapter-wise with proper labelling and practise drawing them. Use graphs wherever applicable, even in short-answer questions.
- Many students find it difficult to identify items included in national income or domestic income. Maintain a separate list of such questions along with explanations to understand the logic behind inclusion and exclusion.
- While solving numericals,

clearly write "Given" and "To Find," mention the formula and show all steps. Avoid shortcuts during practice as writing complete steps helps reduce errors in the exam.

Indian Economy Tips

- The NCERT textbook is the most important source for Indian Economy. Read it carefully as questions are often directly based on it.
- Prepare short notes for quick revision before the exam.
- Follow a structured revision flow: read the chapter carefully, revise the recap section, practise

- questions based on the chapter and solve objective questions for reinforcement.
- Maintain a list of important dates, data points and policy-related developments. Using accurate data in answers can improve the quality of your responses.
 - After completing your first revision, cross-check the official syllabus and ensure that every topic has been covered.
- Answer Writing Tips**
- Manage time carefully. You may spend around one hour on Macroeconomics and about one and a half hours on Indian Economy. Keep at least twenty minutes at the end to revise the entire paper.
 - In Macroeconomics, use tables and graphs wherever required. Write full formulas in numericals and avoid abbreviations.
 - Begin answers with definitions wherever possible and conclude with a short line. Present answers in clear points.
 - You may start with either section depending on your comfort, but complete one section fully before moving to the other.
- (The writer is PGT Economics, HOD Social Science, Seth Anandram Jaipuria School)