



Cognitive
Systems
Academy™



Photo is for illustrative purposes, design varies according to actual product made by students.

ROBOTICS Arcade Game Machine

**Ages 7–14 | LEGO
Mindstorms Robotics
Applied Science
Hands-on**

**DSA Portfolio Boost |
Duration: 2 hrs**

A program of Applied Computational Intelligence Institute
Curriculum powered by the Explainable Intelligence™ Framework
with research support from the Cognitive Intelligence Lab



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Another World Class Content by Cognitive Intelligence Lab

Technology is no longer something children just use — it is something they must learn to understand.

From voice assistants and smart homes to self-driving cars and AI tools, the world is increasingly shaped by intelligent systems that sense, decide, and respond.

This workshop introduces students to that world in a way they can see, touch, and experiment with.



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World Class Framework:

Cognitive Systems Academy™

Students learn to explain how their code and systems behave, like **Harvard (CS50) and MIT**, they don't start by memorizing syntax.

Curiosity, reasoning, and understanding always come first.



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What They'll Learn

Basics of robotics engineering
Sensor-driven behaviour
Cause-and-effect system thinking

Intro to AI and machine learning concepts
Programming real-world interactive systems

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Why Kids Love It

This workshop blends:
building
experimentation
coding
Discovery



Every student makes:
a working arcade game with robotic controller
a deeper understanding of intelligent systems
the confidence to build and explain how it works

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Key Takeaways

DSA PORTFOLIO BUILD UP

- Each student receives a Digital DSA Portfolio
- DSA write-up, Testimonial & Evidence

Skill Sets:

- Creativity
- Communication Skills
- Collaboration & Cooperation
- Goal Orientation
- Leadership Skills
- Analytical Reasoning
- Scientific, Robotics concepts
- 21st century skills competencies
- Robotic Technological application and concepts



SHOW OFF!

Let's Show Off!

Present what you have built!

Student presentations to parents at Open House.

- 1) Introduce your team and name your design!
- 2) What does it do?
- 3) What are your roles?
- 4) How does it work?
- 5) Share one challenge you encountered during the build.
- 6) What is your solution?
- 7) Why Should we vote for you?

14 Years of Pioneering STEM Education & Robotics in Singapore

By creators of FLL Grand Champion

Award-Winning Curriculum

Developed by FLL Grand Champion Master Trainers.

Curriculum developed by experienced, award-winning robotics and computing educators, and refined through the **Explainable Intelligence™ Curriculum Framework** with research support from the *Cognitive Intelligence Lab*.



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CODING. REIMAGINED.

Building Intelligence Through Systems Thinking & Explainable AI

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