Cognitive Systems Academy™

ROBOTICS Shop

Self-CheckOut Machine

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

DSA Portfolio Boost | Duration: 2 hrs

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

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

Build a LEGO robot, code and learn about how programming and robots help with our daily lives.

Build a Robotic Self-Checkout Machine. Learn how programming and robotics power everyday life. Ever wondered how self-checkout counters at supermarkets and stores work? In this hands-on workshop, students will design and build their own robotic self-checkout system using LEGO robotics and coding. From scanning items to calculating totals, students experience how real machines automate tasks we use daily.

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World Class Framework:

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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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Design Topics

Design a Self Check Out Machine

Build , Code, Play

-Build system components to be completed by individuals, then work as a team, combine to complete the whole system!

Challenge: **AUTONOMOUS**

-Build and Program a system to scan, process, and checkout items autonomously.

-Open ended challenge/Problem Solving

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

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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

Contact:
team@cognitivesystems.academy

Website:
www.cognitivesystems.academy

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