



# JOYBOT

PREMIUM SCIENCE KITS

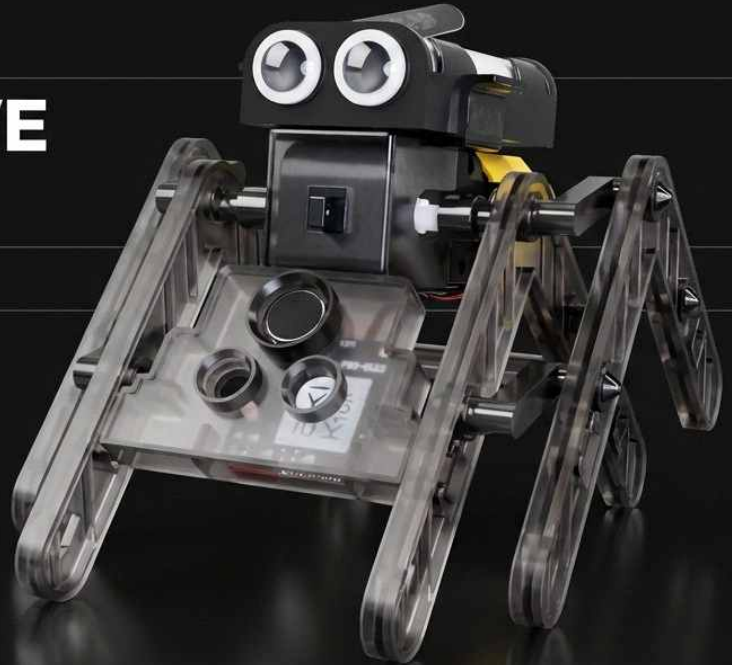
BUILD THE FUTURE • STEAM EDUCATION • ENGINEERED BY JOYWORKS

**JOYBOT**

# SOUND-REACTIVE SPIDER

## BIOMIMICRY & ACOUSTIC SENSING

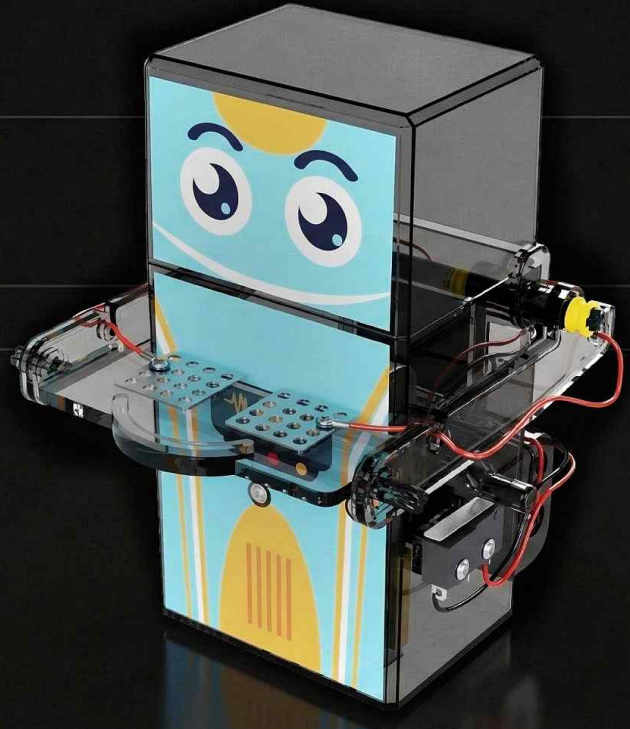
- **Features:** Biologically inspired hexapod design.
- **Performance:** High-sensitivity microphone sensors detect acoustic triggers (claps) to initiate or halt movement.
- **Engineering Principle:** Conversion of rotary motor energy into linear joint articulation.



# INDUCTIVE COIN ROBOT

## CIRCUITRY & KINETIC LINKAGE

- **Features:** Interactive automated savings system.
- **Performance:** Conductive sensors detect metallic objects, triggering a crankshaft mechanism to 'swallow' the coin.
- **Engineering Principle:** Conductor vs. Insulator differentiation and lever-based mechanical actuation.



# ANTI-COLLISION ROVER

SMART MOBILITY & IR LOGIC

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- **Features:** Scaled simulation of emergency braking systems found in autonomous vehicles.
- **Performance:** Front-mounted infrared sensors detect obstruction, instantly cutting motor power to prevent impact.
- **Engineering Principle:** Emitter/Receiver sensor logic and signal processing.



# AUTONOMOUS PATHFINDER

## AI FOUNDATIONS & NAVIGATION

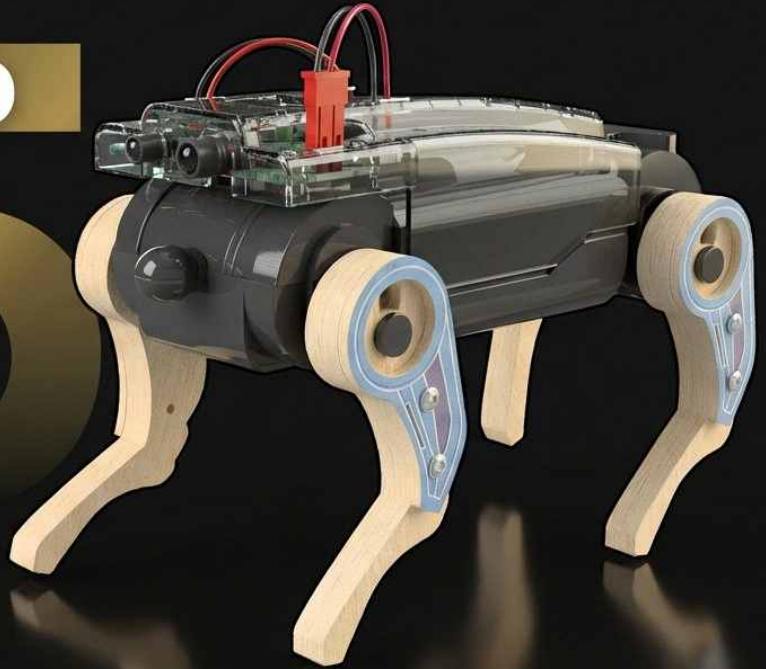
- Features: Self-driving simulation capable of environmental analysis.
- Performance: Echo-based IR sensing identifies blocked paths and triggers steering servos to reroute.
- Engineering Principle: Algorithmic path correction and obstacle avoidance protocols.



# QUADRUPED WALKER

## MECHANICAL BALANCE & GEAR TRANSMISSION

- **Features:** A study in stable locomotion using a four-legged structure.
- **Performance:** Optimized gear ratios ensure steady forward momentum while overcoming minor terrain variances.
- **Engineering Principle:** Center of Gravity (COG) management and multi-axis joint coordination.



# KINETIC MUSIC BOX

MAGNETIC MECHANICS &  
POTENTIAL ENERGY

- Features: An elegant fusion of auditory and visual mechanics.
- Performance: Manual winding stores potential energy, driving a magnetic cylinder to induce contactless rotation.
- Engineering Principle: Translation of spring energy into rotational torque and magnetic coupling.



# WIRELESS ACOUSTIC UNIT

DATA TRANSMISSION &  
SOUND TRANSDUCTION

- **Features:** High-fidelity DIY audio system with Bluetooth 5.0.
- **Performance:** Stable wireless pairing and amplified output for rich soundscapes.
- **Engineering Principle:** Conversion of digital electric signals into physical sound waves via electromagnetic induction.



# DIGITAL VAULT

## MATRIX CONTROL & SERVO ACTUATION

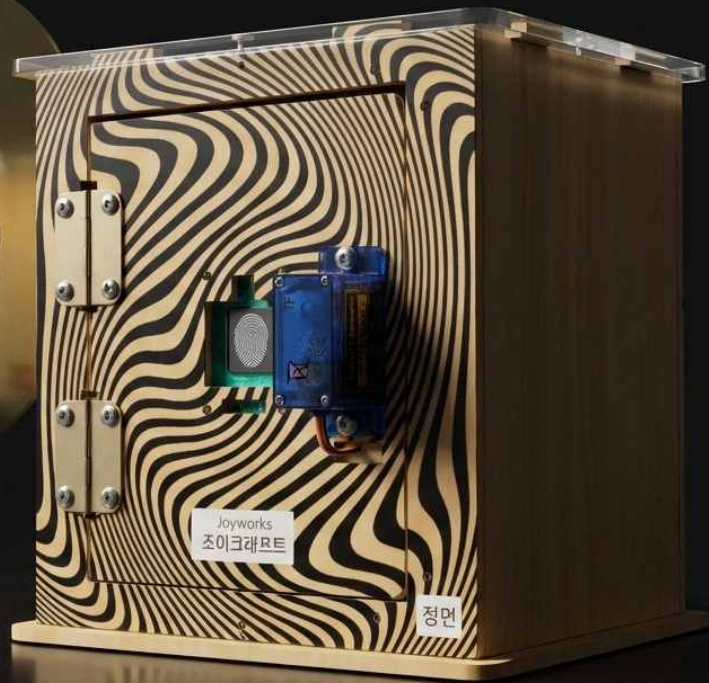
- **Features:** A functional security box utilizing electronic password protection.
- **Performance:** Keypad matrix input triggers a servo motor to physically engage or disengage the lock.
- **Engineering Principle:** Logic gates and electronic actuator control.



# BIOMETRIC SECURITY SAFE

## OPTICAL RECOGNITION & AUTHENTICATION

- Features: Advanced security utilizing unique biological markers.
- Performance: Optical sensors capture and match fingerprint data against a stored database for access.
- Engineering Principle: Biometric image processing and digital authentication protocols.



# ULTRASONIC AUTOMATION

## FEEDBACK CONTROL & SMART HOME TECH

- Features: Non-contact, hygienic automated lid system.
- Performance: Ultrasonic sensors calculate proximity to trigger servo motors for automatic opening.
- Engineering Principle: Distance measurement via sound waves and feedback loop control systems.





# JOYWORKS

WHERE CREATIVITY MEETS LOGIC



Safety  
Verified



Intuitive  
Assembly



Real-World  
Science

**JOYBOT**