The eco-sustainable hexapod

**Materials Used:**

* **Acrylic Components:**
  + Acrylic plates
* **Mechanical Parts:**
  + Screws
  + Brass standoffs
  + Nuts
* **Dynamic Parts:**
  + Servo micromotors
* **Electronic Components:**
  + WLAN module
  + USB cable
  + Hexapod controller
  + 2× 18650 repurposed lithium-ion flat-top batteries
  + Repurposed Nitecore lithium-ion charger
  + **Recycled Components:**
  + Amazon packaging
  + SunFounder Arduino kit packaging
  + Repurposed Nano boards

**Design Inspiration and Connection to Engineering**

This design was inspired by my passion for robotics and reflects core principles of engineering, including problem-solving, system troubleshooting, and component integration. The project required proficiency in the Arduino IDE and C++ programming, expanding my technical skill set. It merges my interest in embedded systems with a commitment to engaging, education-driven innovation.

**Ethical and Societal Values it Represents**

The ethical and societal value of this hexapod lies in its ability to inspire others to innovate and engage with engineering and coding. By demonstrating that complex technology like robotics can be built using accessible tools and kits such as Arduino, it helps break down perceived barriers to entry. Additionally, by using repurposed and recycled materials, the project highlights that engineering can be both cost-effective and environmentally sustainable.

**Conclusion**

Building the hexapod robot strengthened my mechanical skills, deepened my connection to robotics, and enhanced my coding abilities within the Arduino ecosystem. It also challenged me to think creatively to understand how to implement more sustainable initiatives.