Giraffe Feeding Enrichment to Promote Natural Locomotive Patterns

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Project Background
The difference between the natural habitat and the zoo environment can deeply impact the mental and physical well-being of zoo animals. Our challenge is to design a feeding device that promotes giraffe’s natural locomotion behavior in the zoo to minimize the said difference.

Design Criteria
- Food as an incentive for locomotion
- Minimal manual labor (automated)
- Simulate a natural environment
- Endure physical strength of giraffes

Meet the Team

Device Logic
- Giraffe initially away from feeding device
- Sound randomly activates to signal feeding opportunity
- Giraffe approaches device within 5 feet
- Motion sensed by PIR
- Motor activated: food not dispensed
- No food found, giraffe moves away from device
- Giraffe forages for food

Device Features
Mechanical:
- Auger coil for smooth, variable, and controlled food release
- Aluminum casing provides structural integrity and mounting
- Customizable foraging component

Electronics:
- Sensor-controlled motor activation
- Keypad enables easy UI for the zookeepers to customize device
- Wireless communication between sensor box and main device

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