

Giraffe Feeding Enrichment to Promote Natural Locomotive Patterns

CENTER FOR LEADERSHIP EDUCATION



Angel Garcia, Eric Guo, Melody Lee, Divya Ravindra
 Faculty Mentor: Dr. Nusaybah Abu-Mulaweh
 Project Partner: Joey Golden, The Maryland Zoo



Project Background

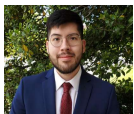
The difference between the natural habitat and the zoo environment can deeply impact the mental and physical well-being of zoo animals. Our challenge is to design a feeding device that promotes giraffe's natural locomotion behavior in the zoo to minimize the said difference.



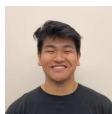
Design Criteria

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

Meet the Team



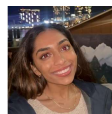
Angel
 Chemical & Biomolecular Engineering, '23



Eric
 Mechanical Engineering, '23

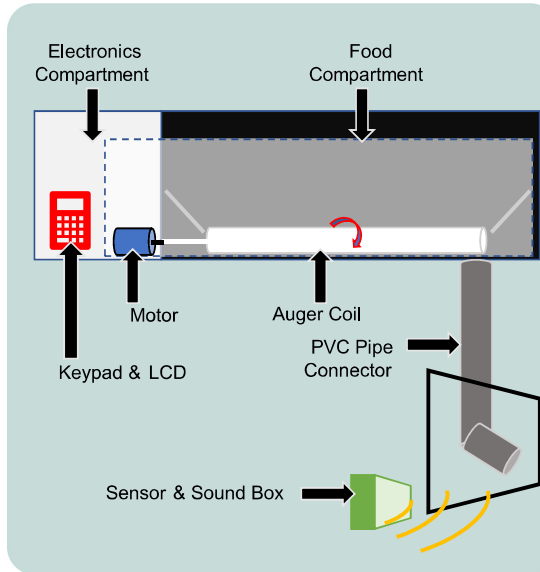


Melody
 Computer Science, Neuroscience, '23

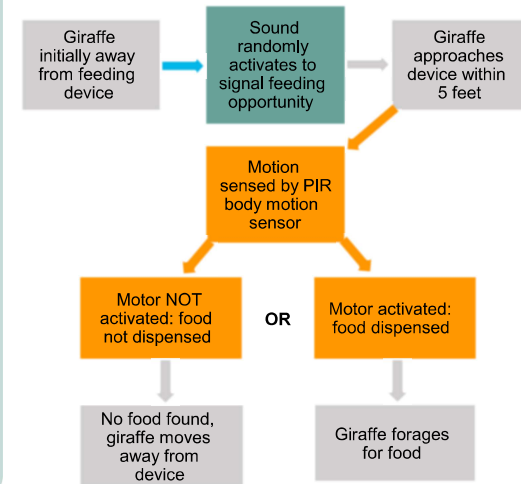


Divya
 Computer Science, '25

Solution



Device Logic



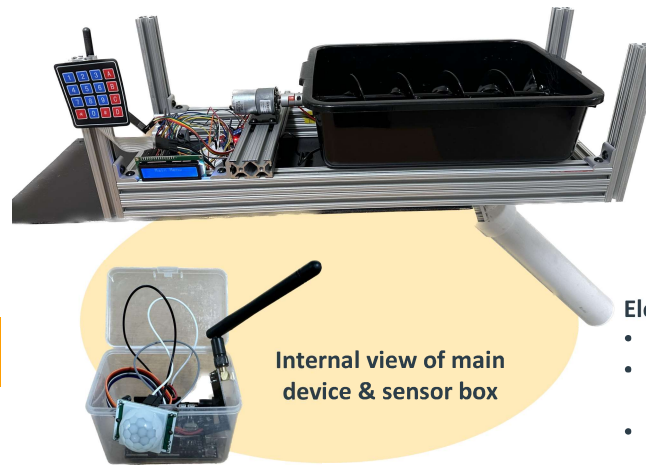
Device Features

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



Acknowledgement

Special thanks to the resources provided by Multidisciplinary Engineering Design, Dr. Nusaybah Abu-Mulaweh, Joey Golden, and the Maryland Zoo team.

Watch our video >>

