

01 Product Design

Pet Sphere

**The future pet.
Human's best companionship.**

 <https://youtu.be/wJFLMIQ7Ngg>



Arduino (C++), Rhinoceros

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Ideation

Touch plays an essential role in our interactions with pets.
To replicate this in our product and convey similar **emotional value**, we aim to simulate the **tactile interactions** found between humans and pets.

What should a futuristic pet be like?



By studying human-pet interactions,
We identified two key factors:
touch experience and **response**.

No Edges

The touch experience should evoke associations with pets.



Electronic Components

To imitate a real pet by sensing the touch and reacting to auditory or visual cues.

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Furry Fabric

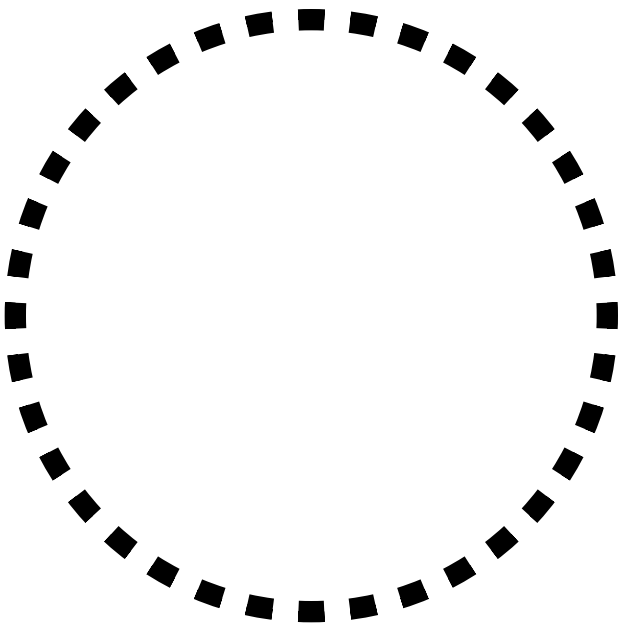
Improve touch experience, foster emotional bonds.

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Wheels

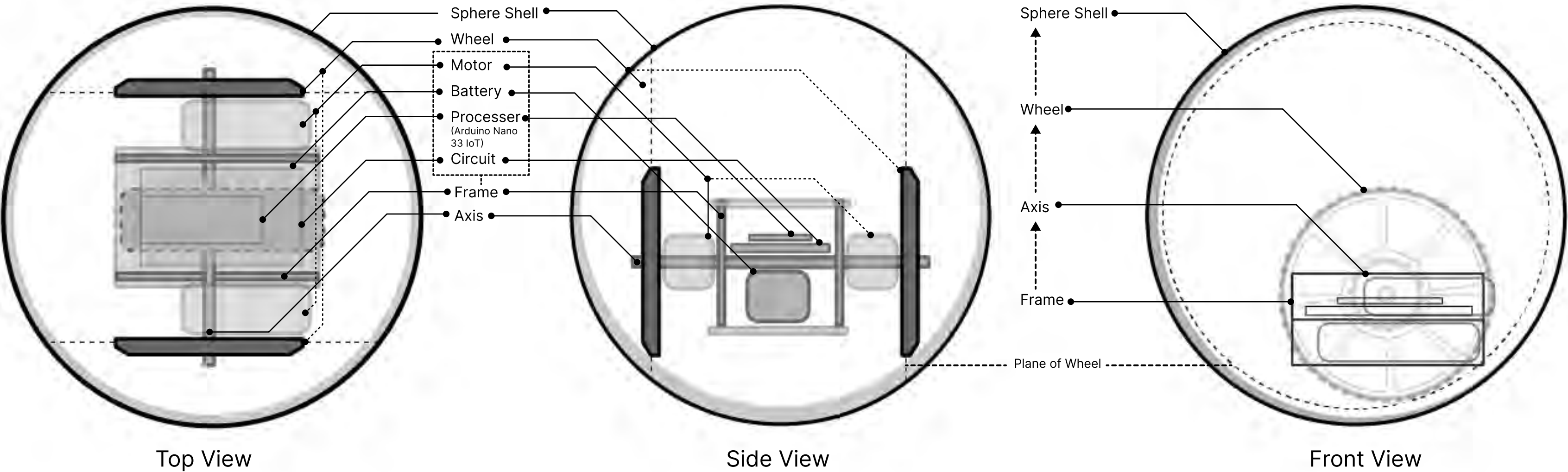
Respond to touch and sensory cues with actions like "running away" or "getting excited".



SPHERE

Versatile movements, simplicity, and pet-like essence.

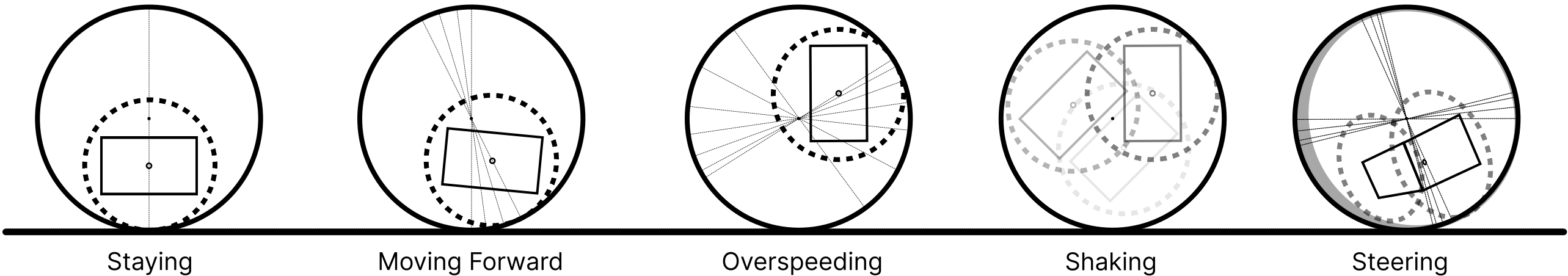
Design



In the SPHERE design, wheels are applied to move forward and naturally steer itself.

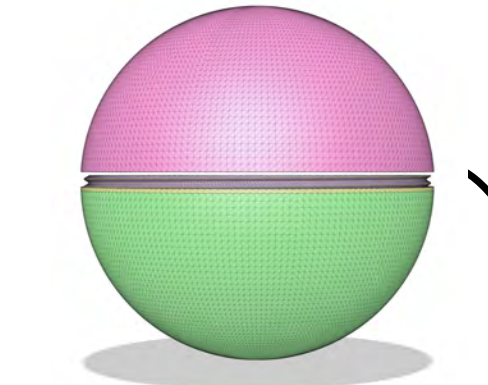
With the higher mass of the frame, the **inertia** drives the wheels to pass force onto the SHPERE.

As the speed **overwhelms**, wheels are going straight up vertically and shake the SPHERE and naturally steers.

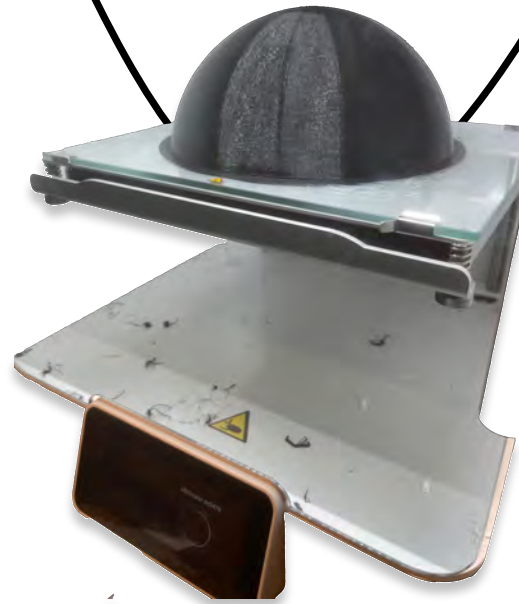


Fabrication

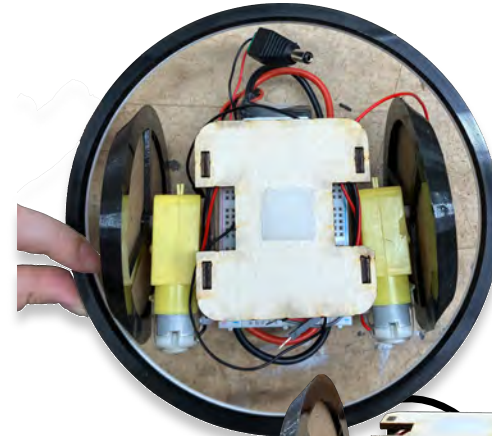
In the procedure of fabricating, everything including power supply, structure and sensor placing are all optimized.



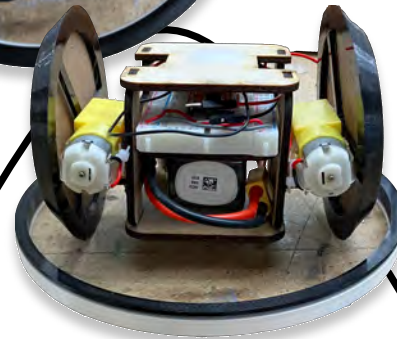
1. 3D Modeling the hemisphere by Fusion & Rhinoceros.



2. 3D Printing and adjusting the details of the hemispheres.



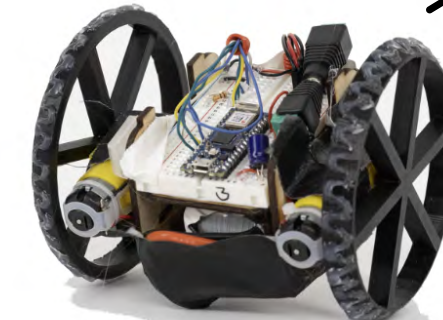
3. Framing the main structure via laser cutting, containing all motors and micro-processors.



4. Programming the motors in arduino platform via C++



5. Attaching Fur Cover, repeat tailoring for least friction from ground.



6. Optimizing material & design, try different sets for best performance.



Interaction

For the futuristic pets, the interaction stays instinctual. Simply **touching** and **lifting** wake the SPHERE.

Once wakes, a SPHERE wanders around randomly. It also shakes when encountering barricades.

Forcing still makes the SPHERE calm down. **Lift it up and hold it**, it would immediately give up just like a cat. However, you have to **put it down gently** or it gets even happier.



Please check the video HERE:

<https://youtu.be/wJFLMIQ7Ngg>

