Reactive Audio Autonomous Hoverboard

UTDesign I: Summer 2023  Faculty Advisor: Dr. Marco Tacca  Mentor: Leo Estevez
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Background
Hover DR1 is an attachment for a hoverboard that brings new life to it by turning the hoverboard into an audio-reactive drone using the integrated bluetooth speaker and your phone. It can be used for recreational or educational purposes.

Ethics
It’s important that we fulfill our promise to create a unit that is functioning as advertised and to ship out the finished product to those you have ordered.

Problem Statement
Most hoverboards are left unused in someones closet collecting dust, by utilizing our technology people will be providing their hoverboard with new life. Our attachment transforms your hoverboard into a drone-powered learning adventure. Designed with kids in mind, RAAH combines the thrill of a hoverboard ride with an educational musical experience. That gives kids the opportunity to learn about robotics, engineering, physics, and sound frequencies.

Challenges
- Fourier Transform on Arduino
- Functional Design
- Device Mounting
- Motor Reactivity
- Kickstarter Funding

Hardware
- Arduino Uno
- L298N H-Bridge Motor Controller
- KY-037 Microphone
- 12V Geared Motor

Software
- Language : Arduino
- Arduino FFT

Background Image

Problem Statement Image