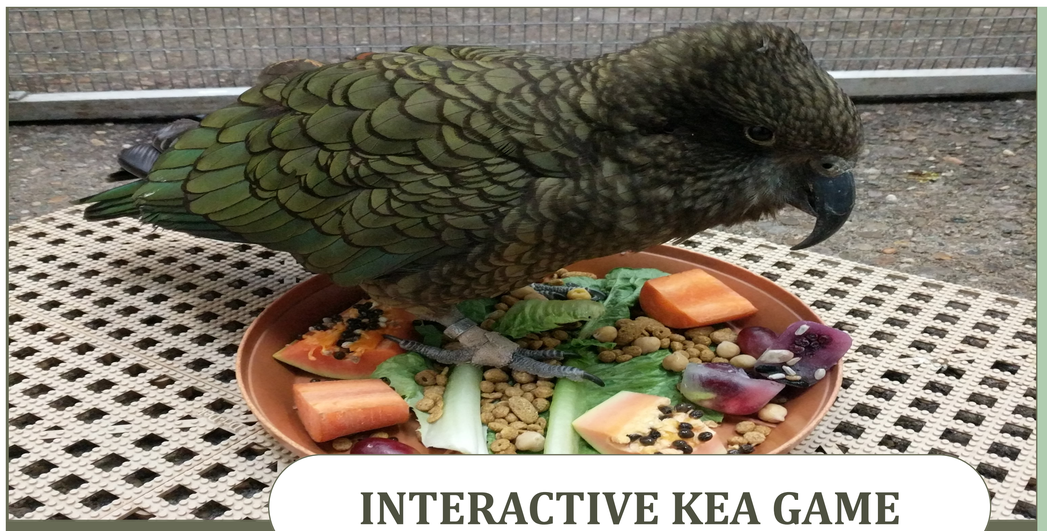


INTERACTIVE KEA GAME

A collaboration with the Cincinnati Zoo to create an interactive game for the Zoo visitors and the Kea birds.

Our Team

Advisor: Dieter Vanderelst

Zoo Contact: Katie Kalafut

Zach Allison

Electrical Engineering

Anne Meyer

Jake Sebald

Computer Science

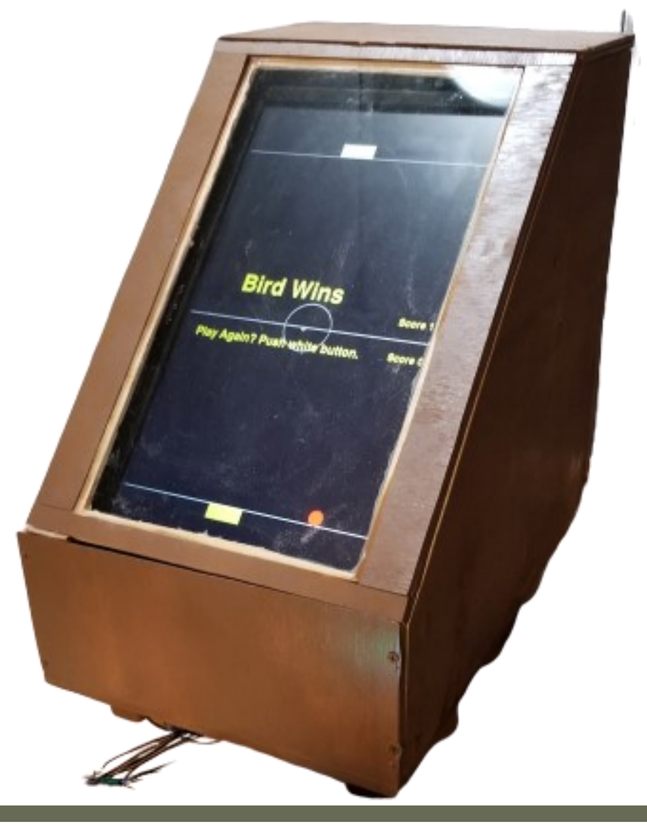
Joe Leanza

Computer Engineering

Problem

The Kea are intelligent birds native to New Zealand. The Cincinnati Zoo was looking for a way to allow the Kea to interact with the Zoo visitors. The project should also allow for behavioral data to be collected about the Kea for current and future research opportunities.

Our System



Kea Bird

Controller and Screen

•Two buttons (Right/Left)

•Indicator Light

Raspberry PI

•Water/Bird resistant

• Takes controller input

Controller and Screen

• Three buttons (Right/Left, Start)

Human

Challenges

The system must be:

- **Weatherproof**
- **Safe for the Kea**
- **Rewarding the Kea**
- **Able to collect Kea data**
- **Resistant to the Kea's beaks**
- **Modifiable (the game can change)**

Solution and Accomplishments

We utilized open source code to implement our game, Pong. We chose this game as we believe it is simple for the birds to learn how to interact with our system and the Zoo can modify the game easily by replacing the open source code with another game as needed. We modified the code to fit our specific needs and work within our system. Using a Raspberry Pi, we built the hardware to run the game. We used wood and computer monitors to construct our system. We used plexiglass to cover and protect the monitors from both the weather and the birds. Our design includes one system with two built in monitors. The system is intended to be kept outside of the Kea enclosure, this is to ensure that the system is not harmful and cannot be destroyed by their beaks.

Future Plans

We would like to see our product be handed off to the zoo, where the birds can learn to interact with the system and the visitors of the Zoo. The Zoo will be able to connect a rewards system for the Kea. Eventually, through RFID chips, the Zoo will be able to collect data on the Keas' interactions.