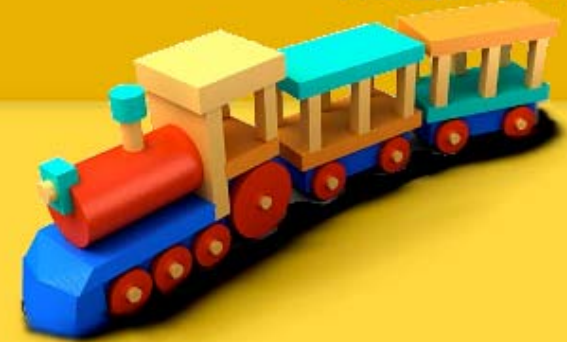




LITE LEADERSHIP IN TEAM ENGINEERING

TRAIN TEAM



Members

Nicolas Bauer Patricia Fu Matt Chavez Kurt Hollar Man-Sum Lai Evelina Overlingaite

Our Mission

Design, prototype and develop systems to improve the functionality and safety of the train that encircles the Santa Barbara Zoological Gardens.

Projects

• Train Tracking System

Monitors the position of each train and sends information to staff and trains to prevent collision.

• Rail Gauge Monitoring System

Measures the separation between the track to prevent derailment.

Our Design

The diagram shows each component and its hardware interface to the integrated system. It relies on inductive sensors to determine the location of the train and create a catalogue for the rail gauge measurement system.



Wireless Interface

After being organized using LabVIEW, data is transmitted across the zoo to the other train. Received data is decoded by LabVIEW and displayed on the LED map.

Detachable Rail Gauge Observation (DRAGON)

Using a linear potentiometer affixed to a gas spring, the separation between the track is measured then recorded using LabVIEW. The data is then organized into a daily report on the track conditions. This system is towed by the train daily and then detached.

Train Tracking System

Long range inductive sensors detect metal triggers placed around the track. As each train passes over a trigger, the signal is sent to a DAQ and processed via LabVIEW. The position is then sent an LED map located on the instrument panel on each train.