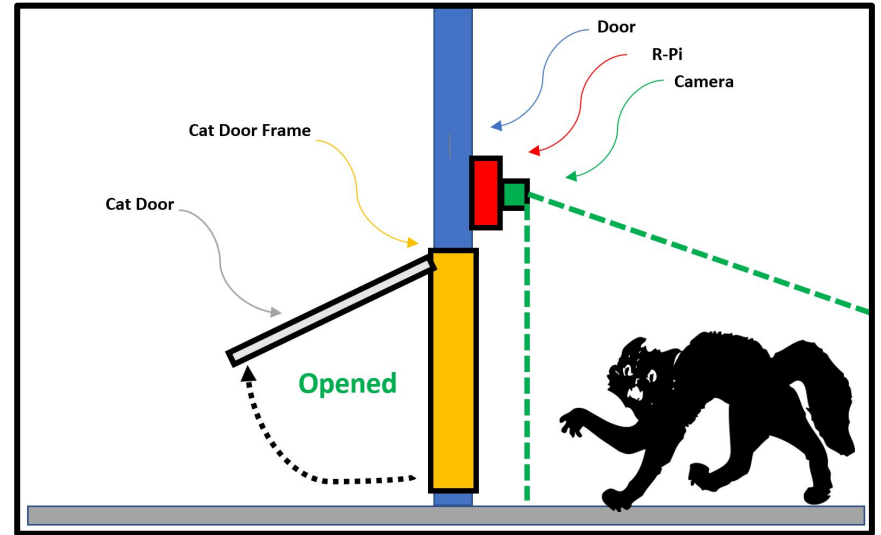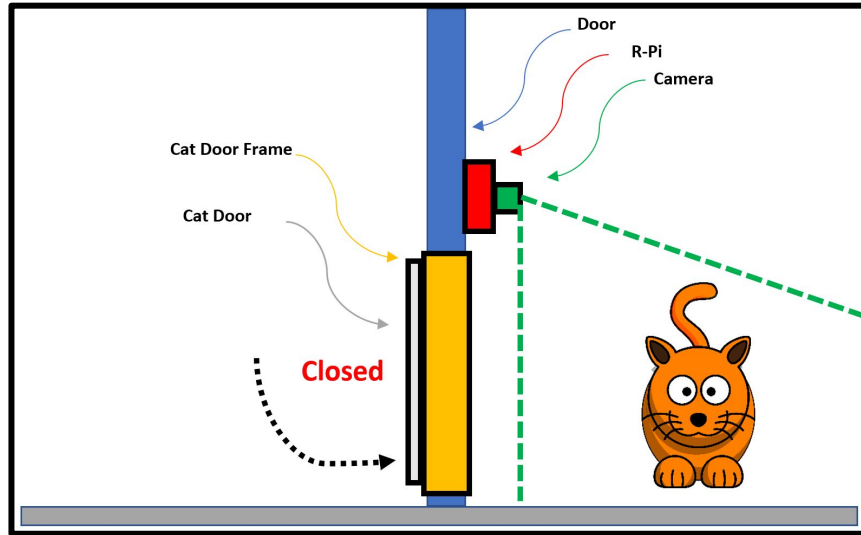# ECE 473 Final Project: CatNet
## ( a smart cat door )
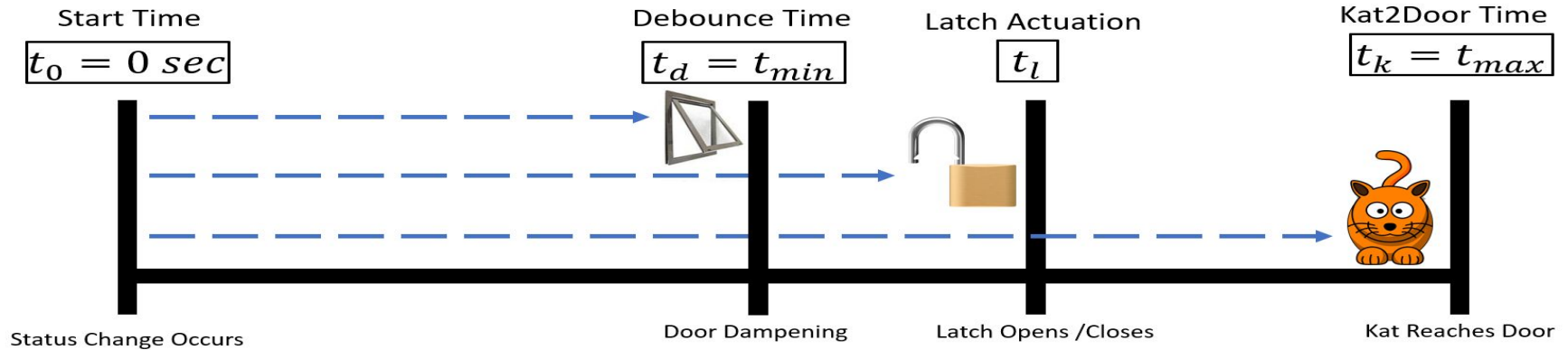
**VS**

By: Desmond Carter & Roderick Renwick
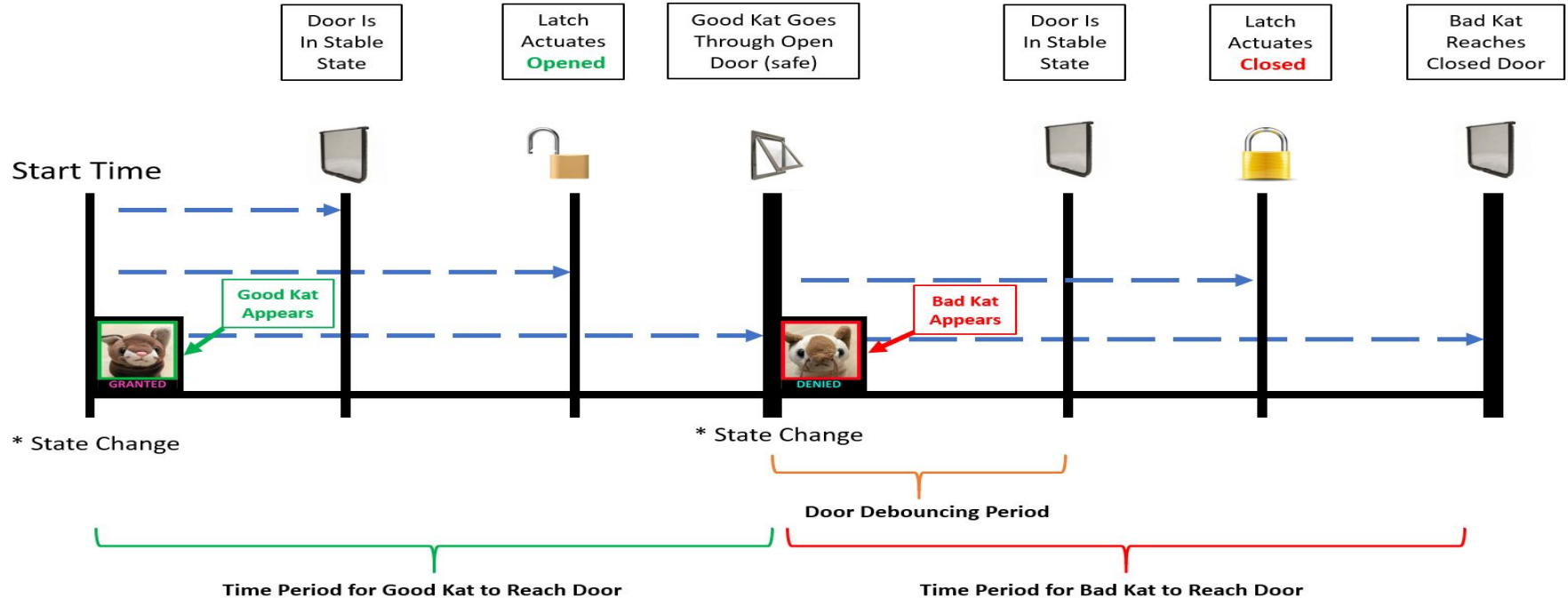
# Concept

# Requirements

Time Constraint: $t_{min} < t_l < t_{min}$



**Start Time**
$t_0 = 0\ sec$

**Debounce Time**
$t_d = t_{min}$

**Latch Actuation**
$t_l$

**Kat2Door Time**
$t_k = t_{max}$

Status Change Occurs

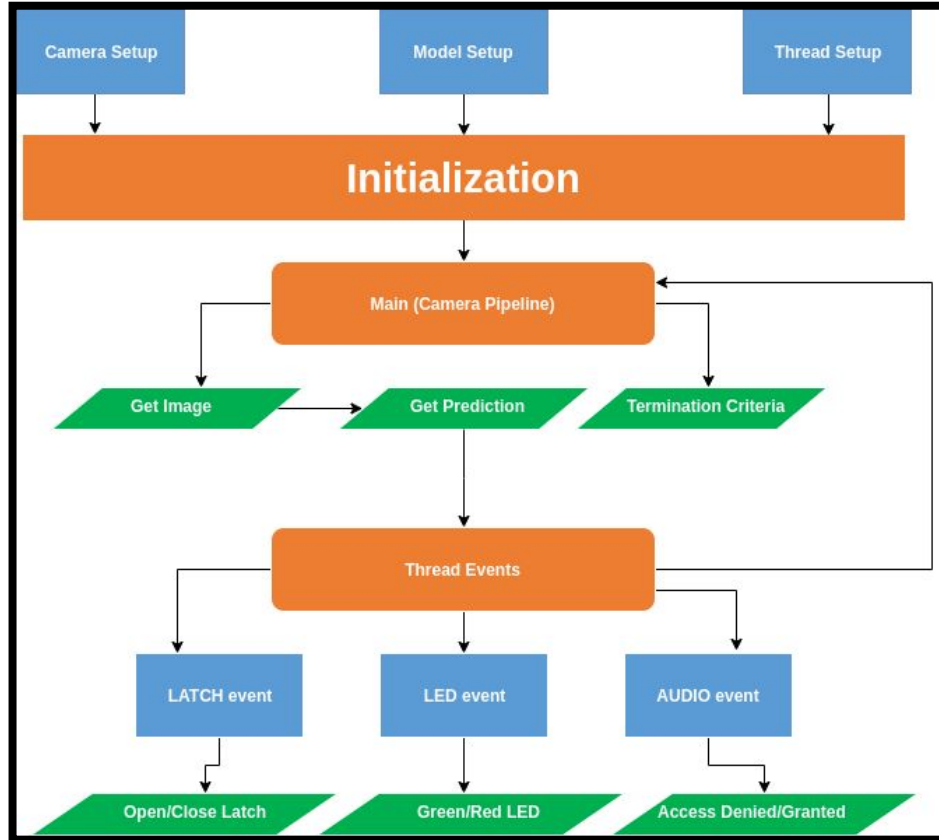Door Dampening

Latch Opens /Closes
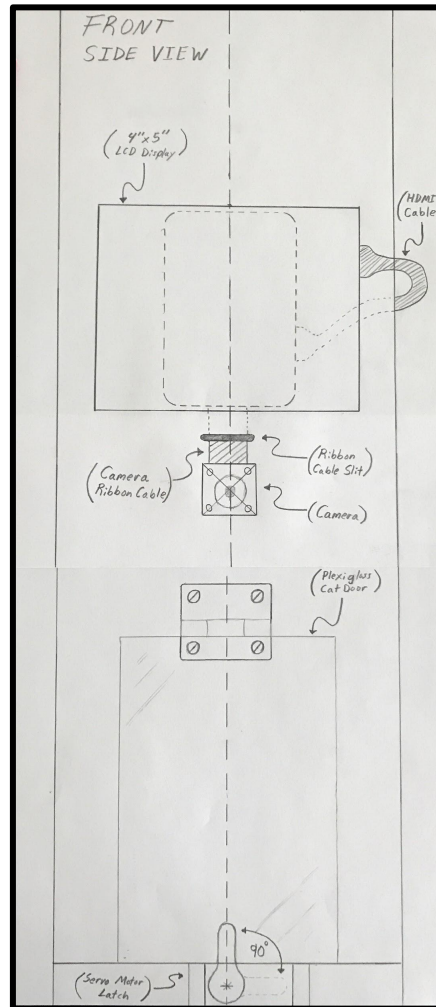
Kat Reaches Door

# Requirements



Time Constraint Example

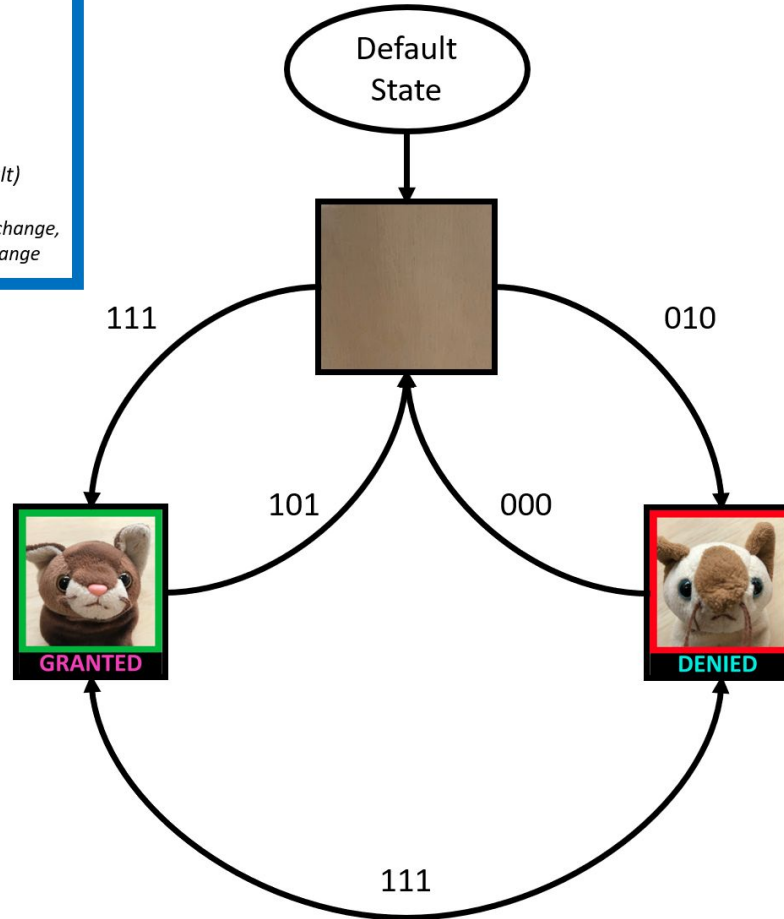# Design: System Flowchart

# Design:
# Physical Structure

# Design: Moore State Change Diagram



LEGEND:
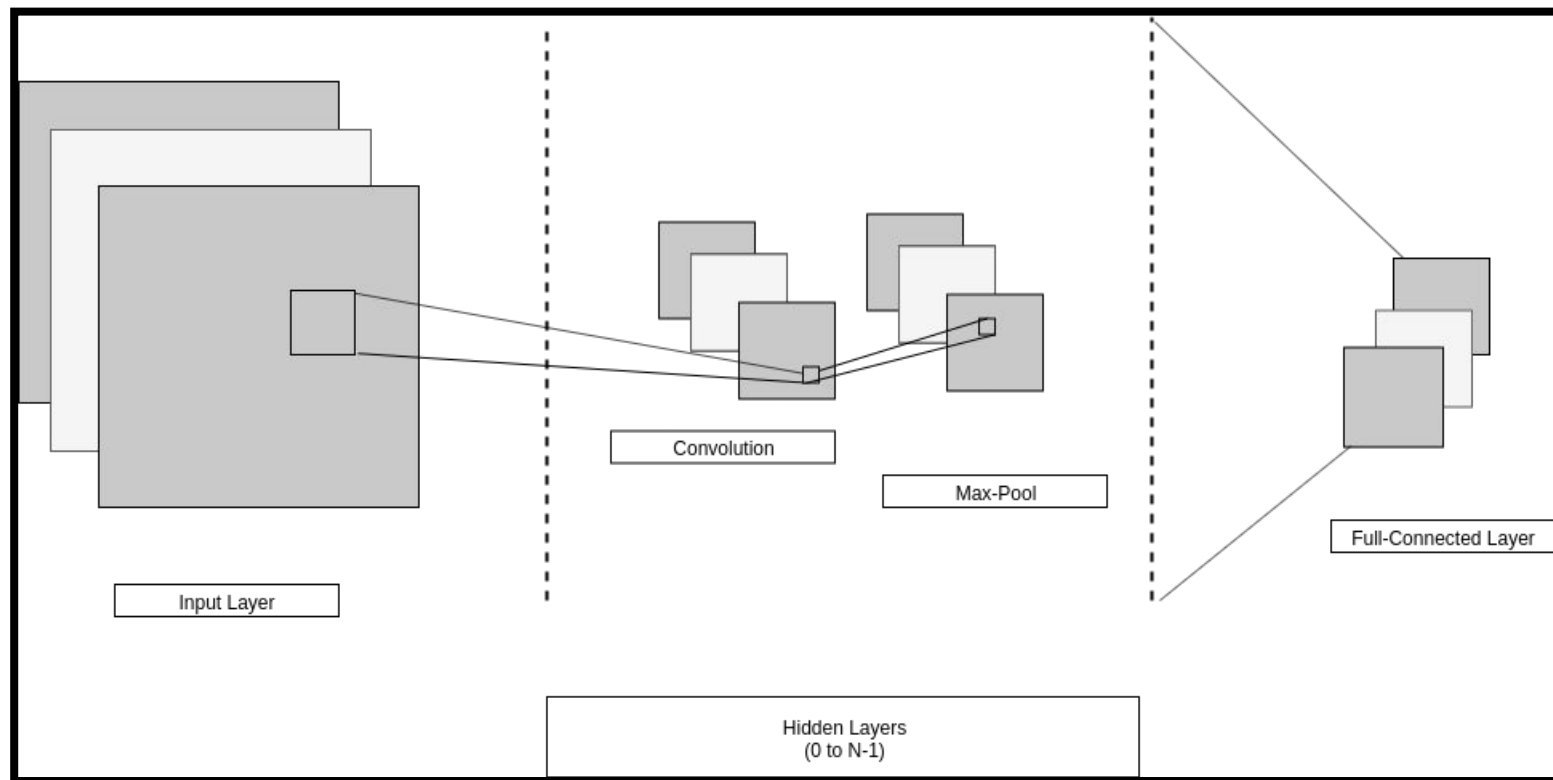
B0 : Latch State
B1 : Audio State
B2 : LED State

EX: B0, B1, B2 = "000"  (default)

* NOTE: A "1" indicates a state change,
while a "0" indicates no state change

Default State

111

010

101

000

GRANTED

DENIED

111

# Design: CNN Model



Input Layer

Convolution

Max-Pool

Full-Connected Layer

Hidden Layers
(0 to N-1)

# Implementation