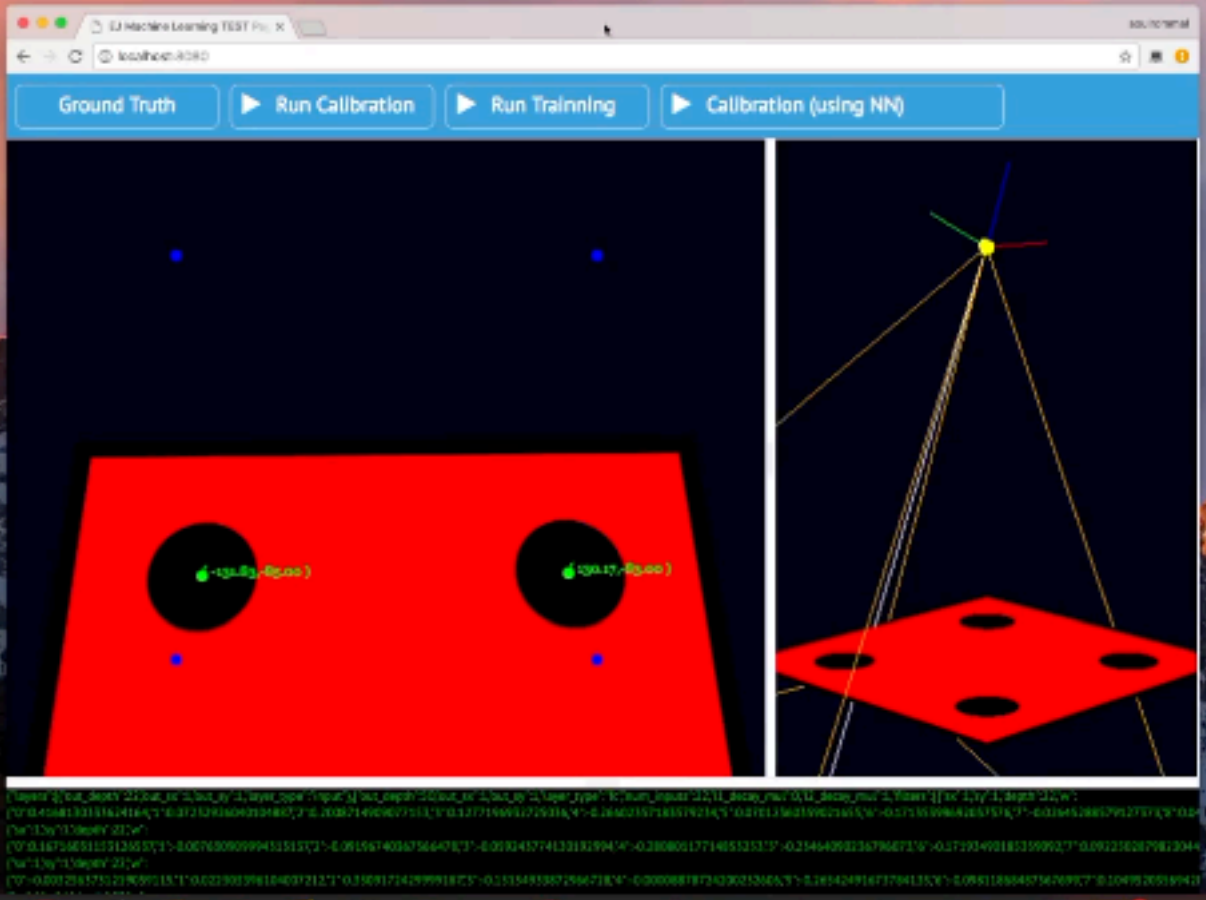
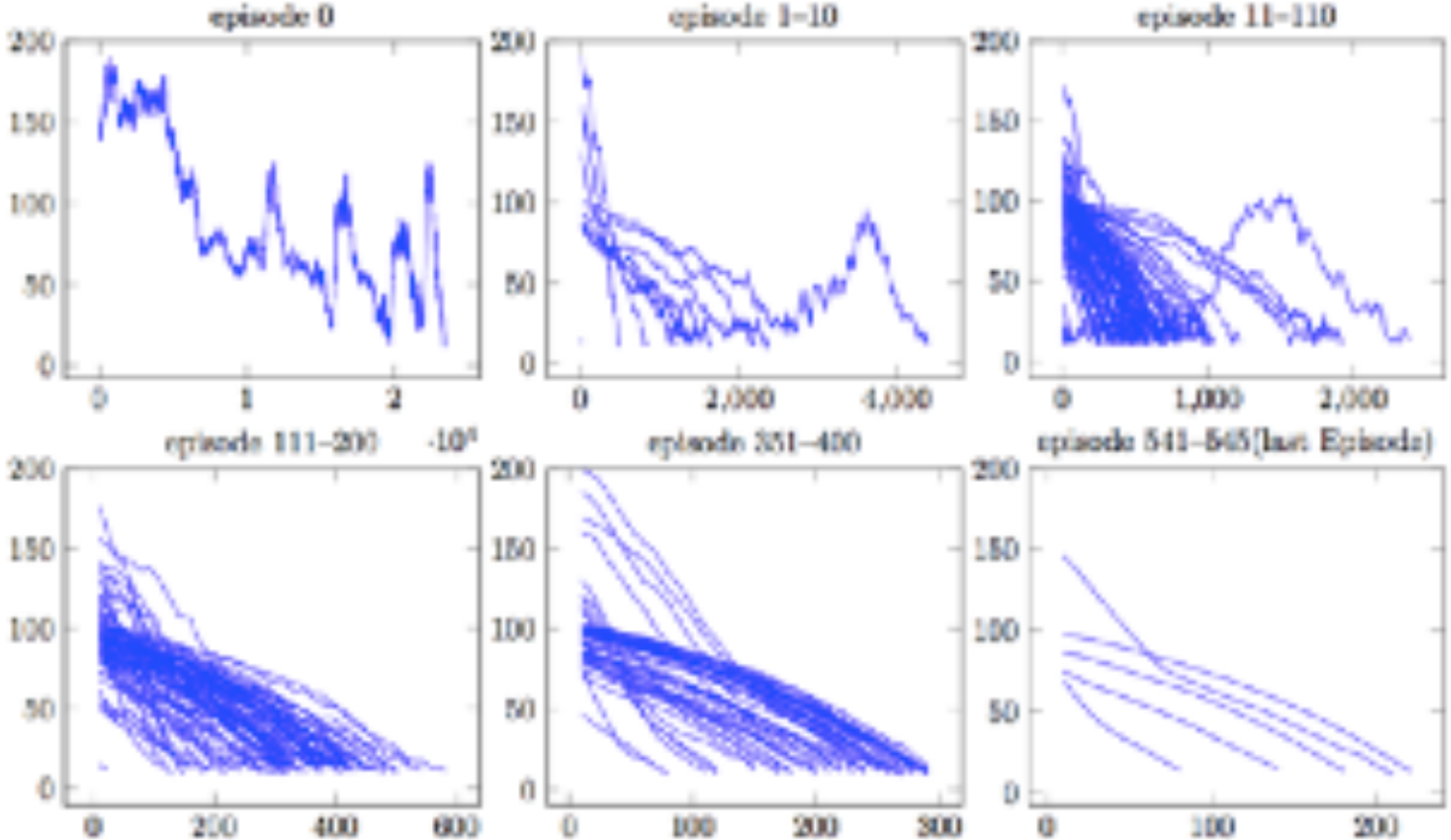
METHOD

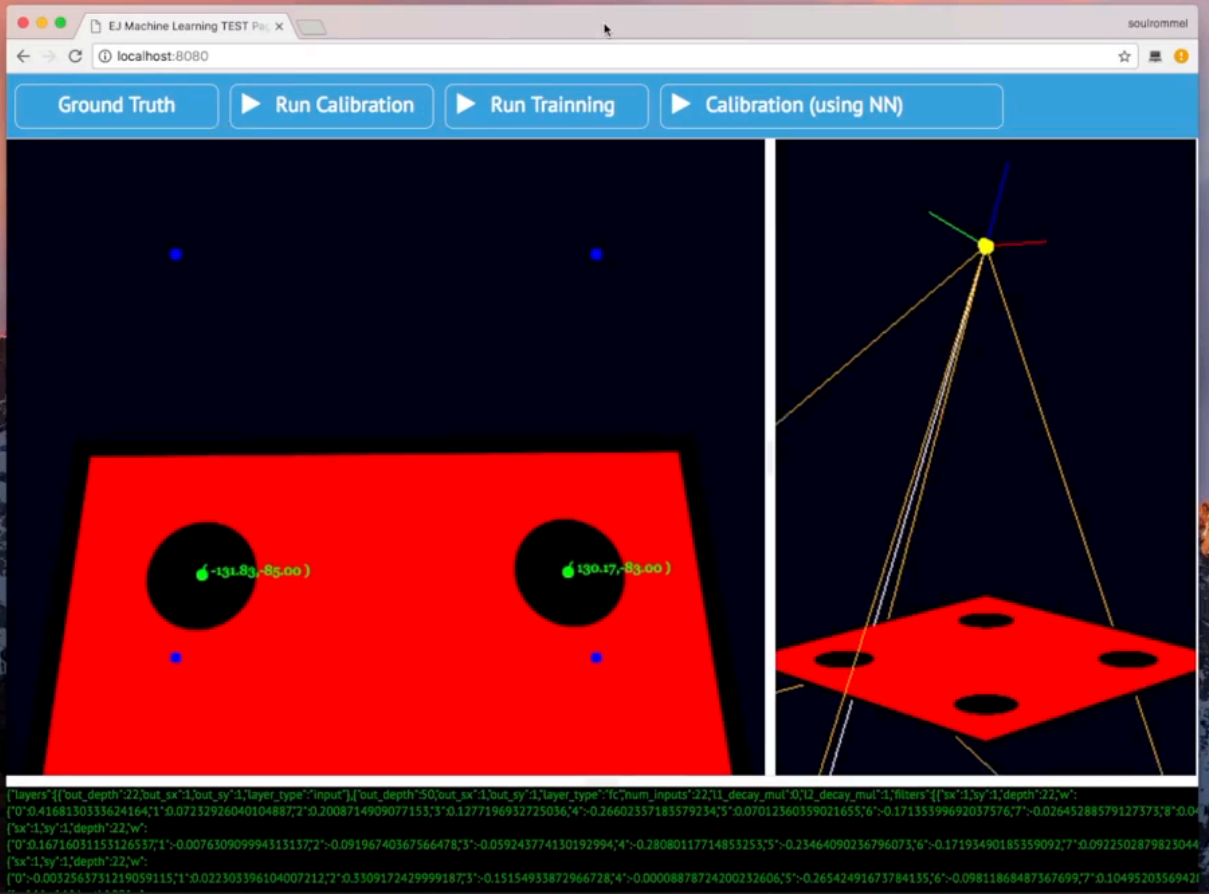
EXPERIMENT


Ground Truth
Run Calibration
Run Trainning
Calibration (using NN)

camera.RandomPosition()
for t in T **do**
    a_t = argmax(Q(s, a;θ))
    $cam_{pos} = cam_{pos} + a_t$
    E_t = Error(x_{t+1}) - Error(x_t)
    if E $\geq$ 0 **then**
        $r_t = 1.0$
    else
        r_t = -1.0
     agent.Backward(r_t)
    if r_t *leq* 10.0 **then** $cam_{pos} = random$

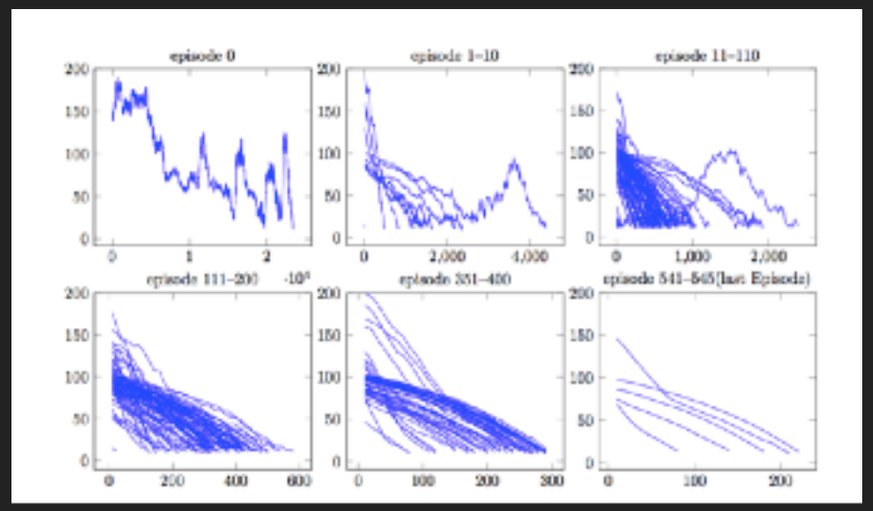

episode 0
episode 1–10
episode 11–110
episode 111–200
episode 351–400
episode 541–545(last Episode)
200
150
100
50
0
0
1
2
2,000
4,000
1,000
200
400
600
300

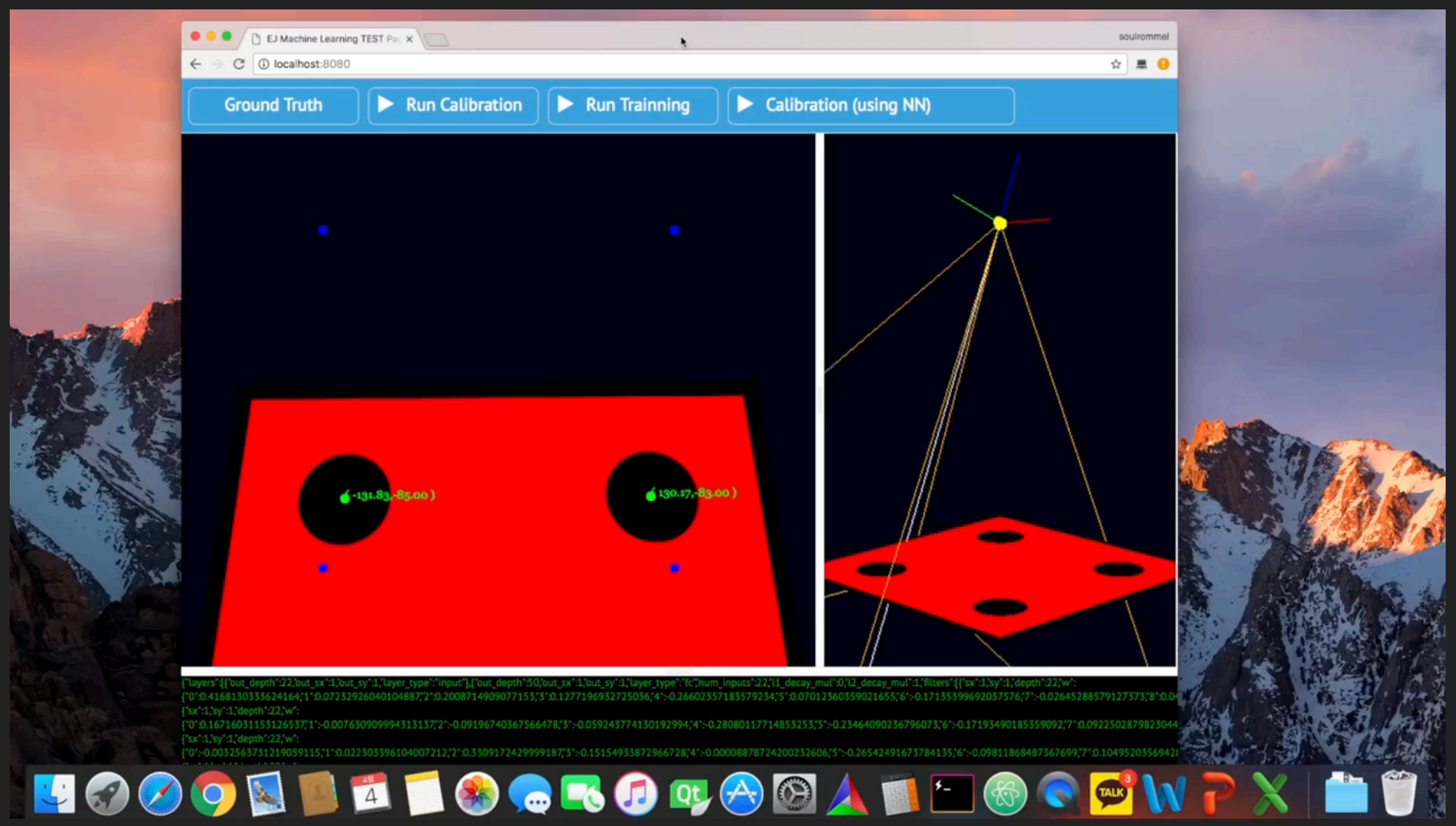
- Episode Start : Camera Random Position
- Episode Done : When Error < N


EJ Machine Learning TEST
soulrommel
localhost:8080
Ground Truth
Run Calibration
Run Trainning
Calibration (using NN)
-131.83,-85.00)
130.17,-83.00)

EXPERIMENT

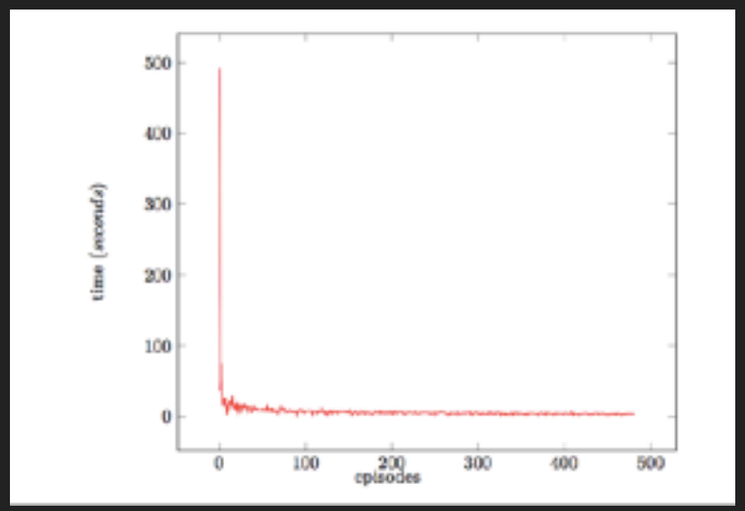
```
camera.RandomPosition()
for t in T do
    a_t = argmax(Q(s, a;θ))
    cam_pos = cam_pos + a_t
    E_t = Error(x_{t+1}) - Error(x_t)
    if E ≥ 0 then
        r_t = 1.0
    else
        r_t = -1.0
     agent.Backward(r_t)
    if r_t leq 10.0 then cam_pos = random
```



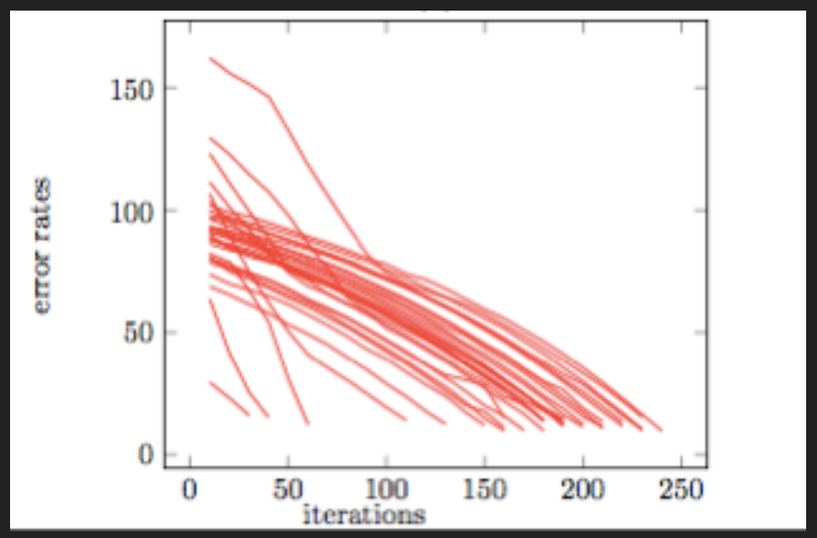


- Episode Start : Camera Random Position
- Episode Done : When Error < N

RESULT



decreasing time as episodes repeated



error rate decreasing for well-trained network