Smart Traffic Light

Black Cat Thailand

Problem

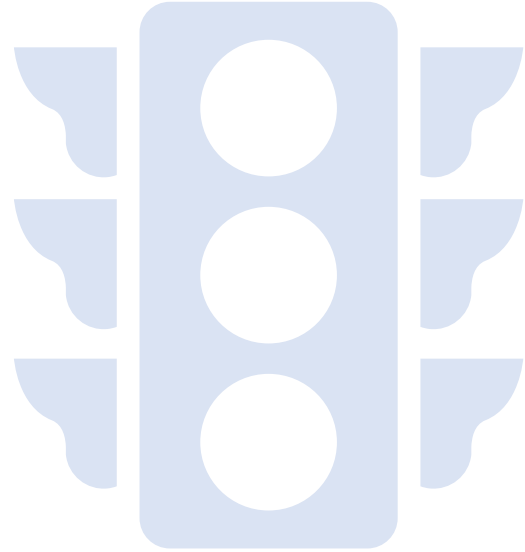### Traffic jam in Bangkok

64.1 hours

Average Driver's Time Spent in Peak Traffic Congestion

12th most congested of all cities

The INRIX Global Traffic Scorecard

Smart Traffic Light

Study Case

Pittsburgh cuts travel time by 25% with smart traffic lights

The smart traffic technology has slashed car emissions by 20%

Black Cat Smart Traffic Light

Smart Traffic light is an AI-Controlled traffic light using CCTV on a road.

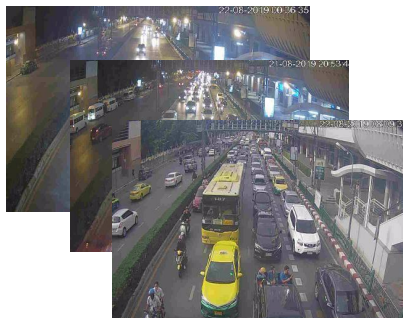Replace only the control system

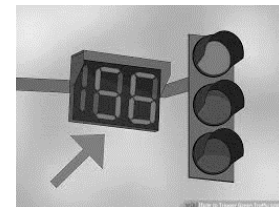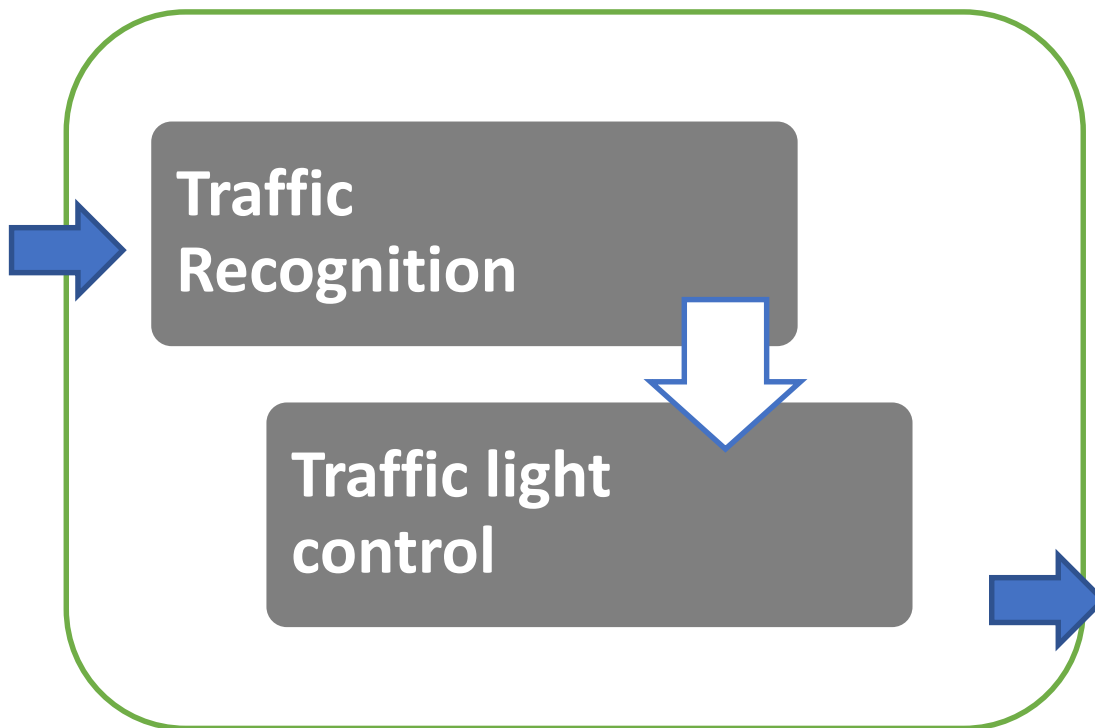Adapt to traffic

Cutting-Edge AI technology

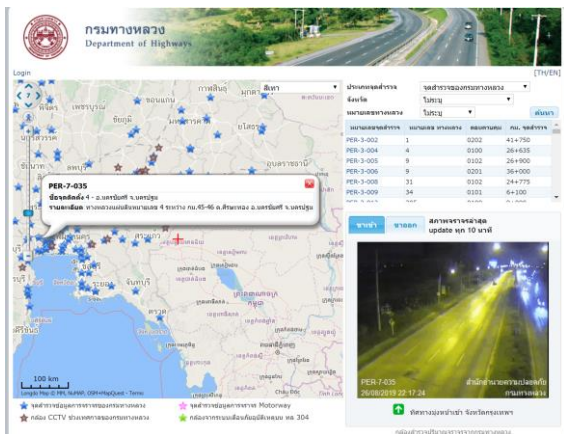# Black Cat Smart Traffic Light

CCTV Streaming

Traffic Recognition

Traffic light control

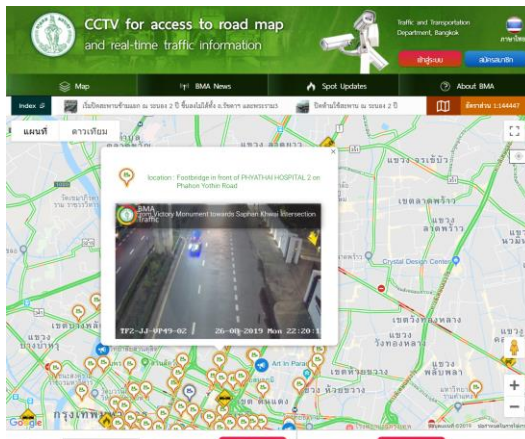Traffic light

Government Data Source

CCTV Streaming

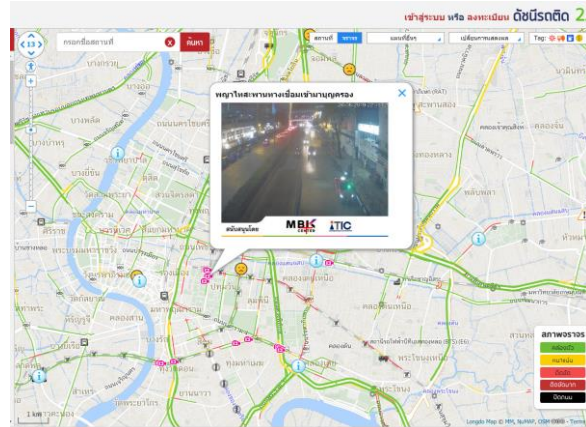**Department of Highways**
กรมทางหลวง

Traffic and Transportation Department, Bangkok
สำนักการจราจรและขนส่ง(สจส)

The Intelligent Traffic Information Center Foundation
มูลนิธิศูนย์ข้อมูลจราจรอัจฉริยะไทย

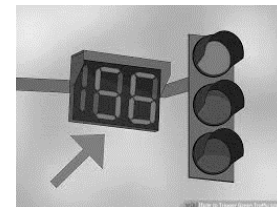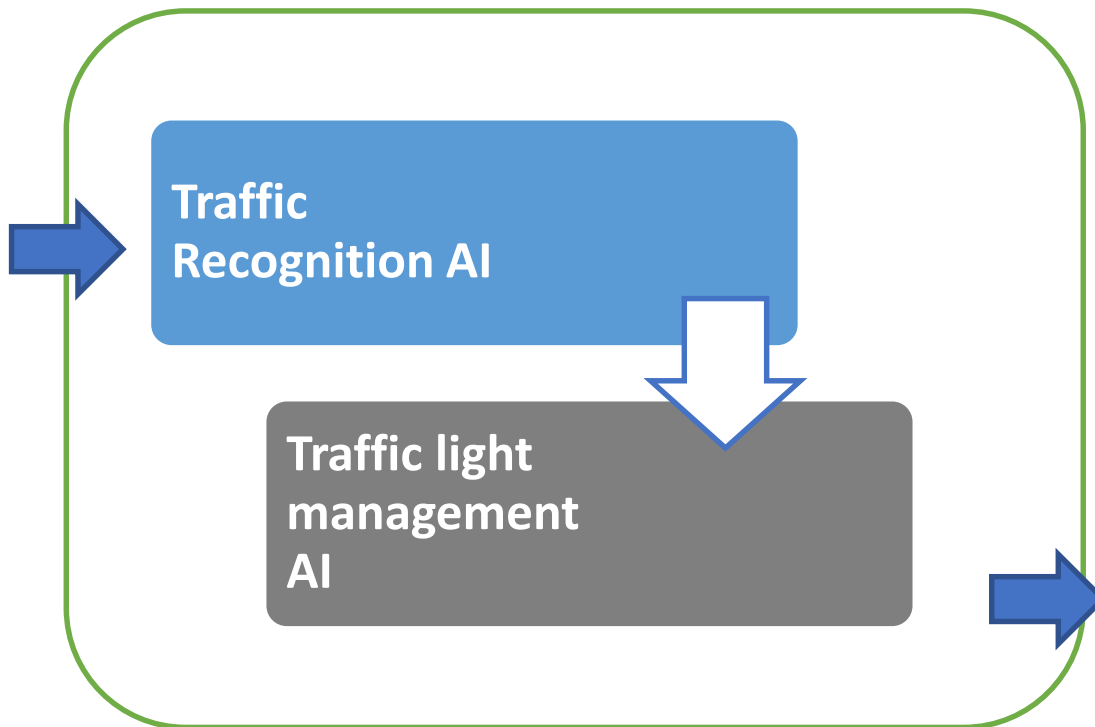

http://highwaytraffic.go.th/DOHWeb/Home.aspx

http://www.bmatraffic.com/index.aspx

https://live.iticfoundation.org/

Black Cat Smart Traffic Light

CCTV Streaming

Traffic Recognition AI

Traffic light management AI

Traffic light

MVP(1) : Traffic Recognition AI

Deep Convolutional Neural Networks

Low Traffic

Medium Traffic

Heavy Traffic

- **Accurate** — Accuracy above 95% in testing dataset
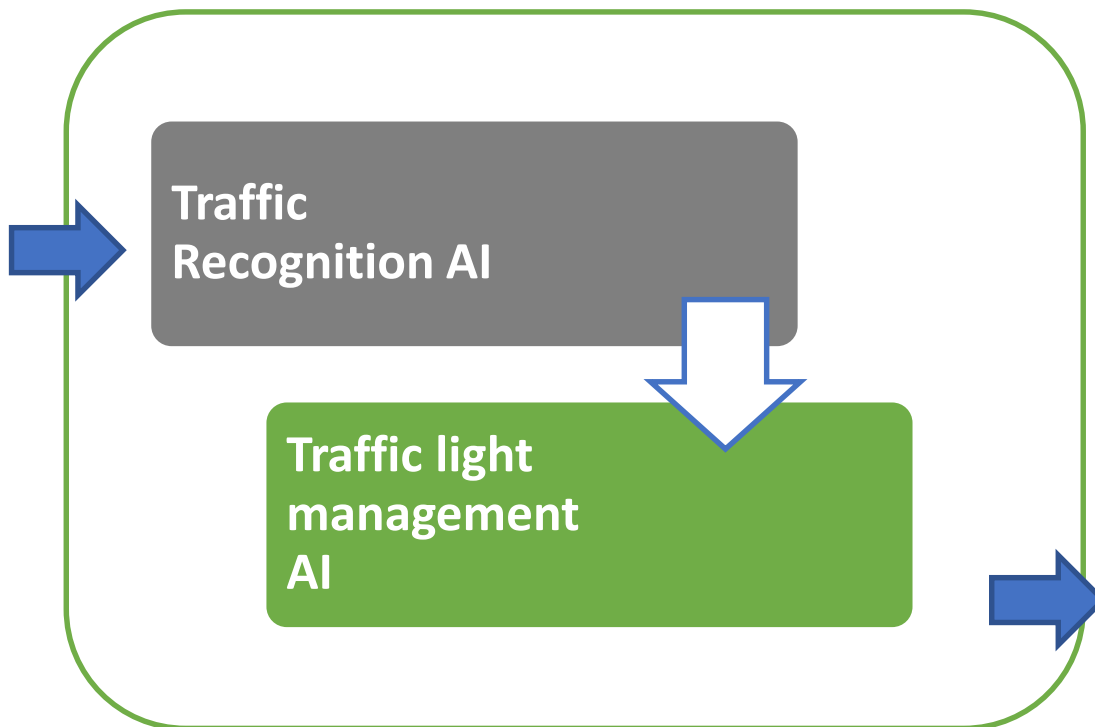- **Fast** — 4 frame per sec / 1 thread CPU processor
- **Light** — Usages 220 MB of Ram while running

Black Cat Smart Traffic Light

CCTV Streaming

Traffic Recognition AI

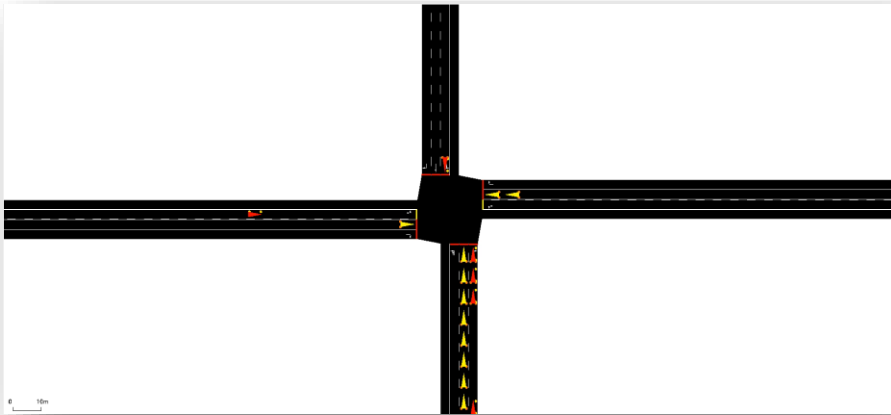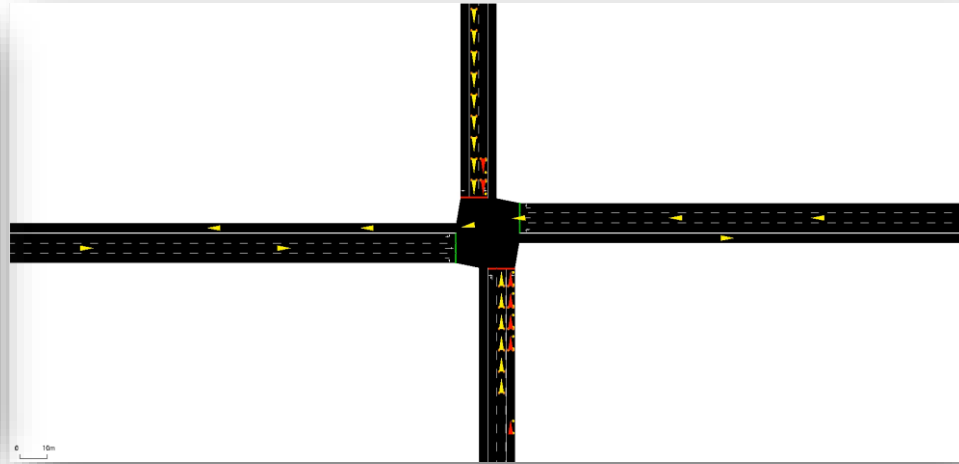**Traffic light management AI**

Traffic light

MVP(2) : Traffic light management AI

Traditional Traffic Light

Black Cat Smart Traffic light
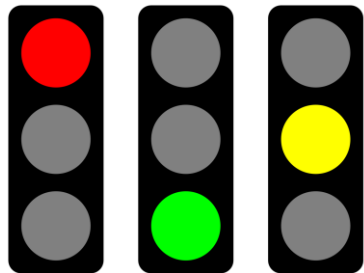

**Deep Convolutional Neural Networks
with Reinforcement Learning**

Reduce the waiting time 50%

Thailand Competitors

Traditional Traffic light	Traffic Police	Black Cat Smart Traffic Light
Fixed time	Human	AI (Deep learning Technology)
Not adaptive to traffic	Adaptive to traffic	Adaptive to traffic
24/7 system	Have work hour	24/7 system

Global Competitors

Smart Traffic Light in another country	Black Cat Smart Traffic Light
Hard to integrate with Thailand system (Different Driving side, different environment such as car model, road style and people style)	Made in Thailand. Black Cat now understand Thai people style and Thai environment.
25% reducing time spent (Pittsburgh)	50% reducing time spent (Simulation)
฿4.5M /installation spot (Pittsburgh)	฿0.3M /installation spot

Black Cat Team

Wisarut Duangmorakot
Data Scientist

Shotitouch Tuangcharoentip
Developer

Orawan Paijit
Designer