# Build Shell Agent with NextJS

Presented by Paco Technical Lead

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PALO IT

# Agenda

- What is ReAct?

- ReAct Prompt Exercise

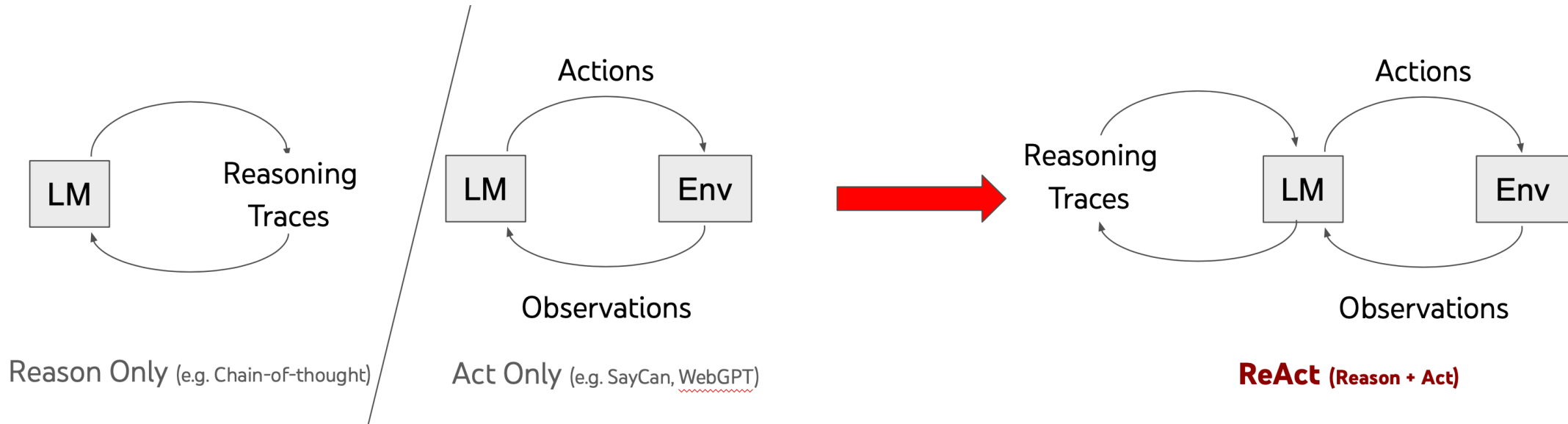- Shell Agent

# Introduction

Motivation and Background

# Introduction

- This project created to study about ReAct prompt engineering technique.

- Start out as an assistant that can operate the laptop. Inspired by OS Copilot

- It is designed to be a bot that execute shell command directly in the laptop.

# What is ReAct?

- It came from a pioneer paper that describe agent. LLM that interact with real world.

- ReAct is Reasoning and Action(https://react-lm.github.io/)



Reason Only (e.g. Chain-of-thought)          Act Only (e.g. SayCan, WebGPT)          ReAct (Reason + Act)

# What is Agent

- Agent is an LLM that can action to real world and receive feedback from environment

# How original Paper manipulate result string?

- Let's take a quick look at https://github.com/ysymyth/ReAct

- https://github.com/ysymyth/ReAct/blob/master/hotpotqa.ipynb

- At `obs, r, done, info = step(env, action[0].lower() + action[1:])`

# Conclusion of ReAct

- It's stacking reasoning and action and send to LLM and attach the result back.

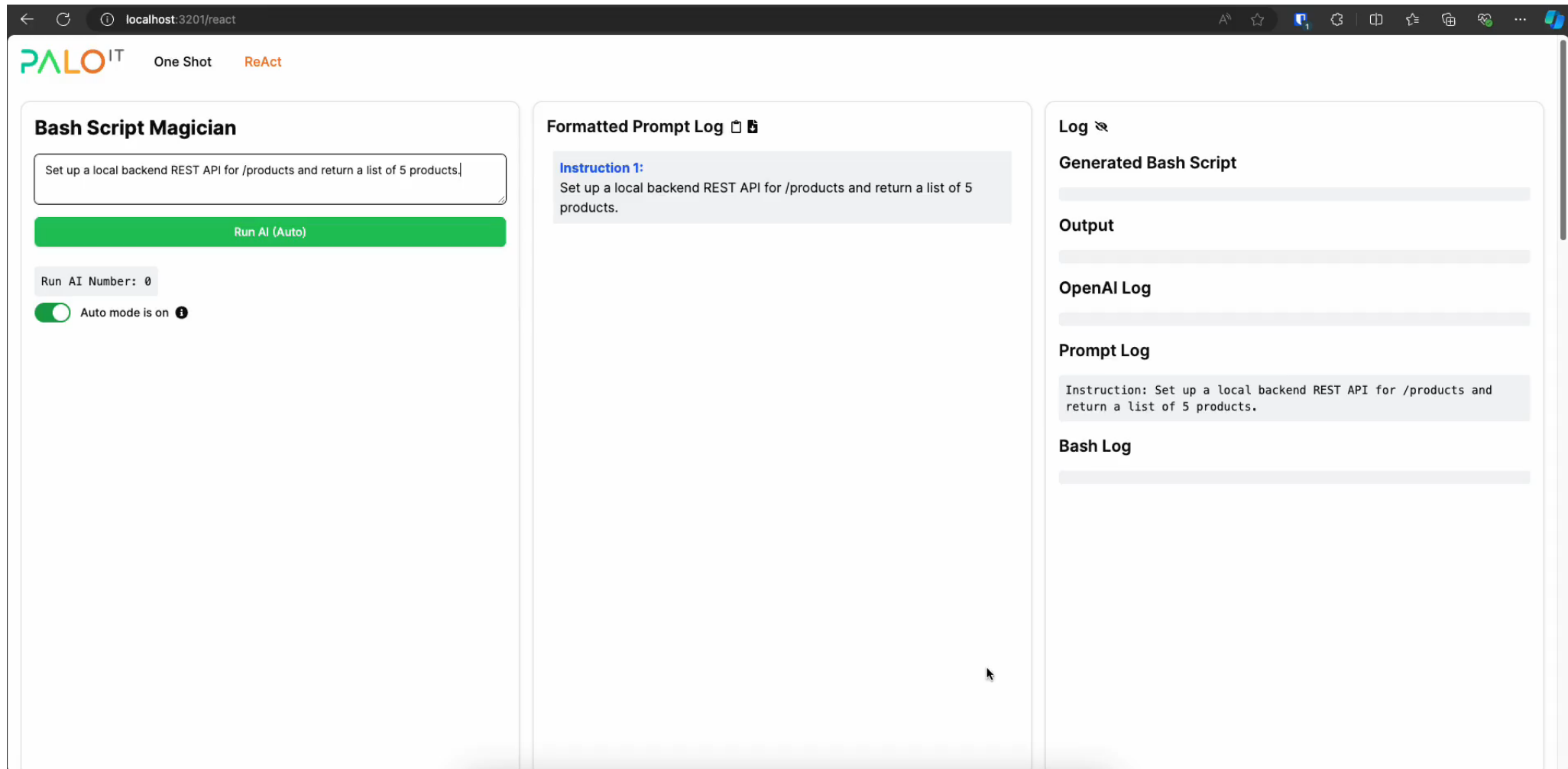- Thought-1, Action-1, Observation-1 ....Thought-N,Action-N,Observation-N

- Until the task is done

# Fun Exercises

- Let's do some simple ReAct

- https://github.com/palo-it-th/LLM-Bash-Agent/blob/main/examples/ReAct-Sample.md

# Introduce Shell Agent with NextJS

- With the need to quickly build POC that help visualize how ReAct work we have...

# Shell Agent

- Fullstack POC build with NextJS

- Use Backend to call OpenAI

- Use Frontend to show result and format and study the input/output of LLM and shell result

- Use Frontend to manage and concatenate result like in original paper

# Overview Diagram

- Let's head over to https://github.com/palo-it-th/LLM-Bash-Agent

# Code Review!

- Let's head over to https://github.com/palo-it-th/LLM-Bash-Agent

# Demo

- Let's try it!

# Thank you! Let's do Q&A