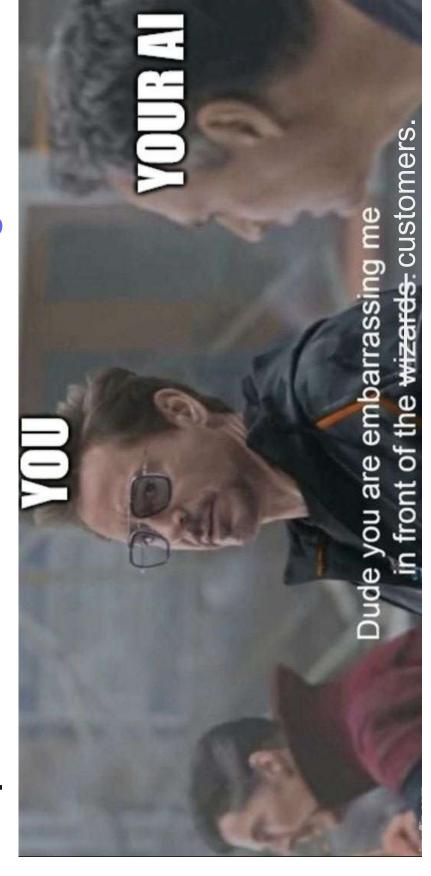
# Temporal & Al | Determinism Challenges

retrieval, and it's irrelevant to test them as though they could. But that's not quite what "LLMs are not databases: they do not do precise, deterministic, predictable data we're trying to do here - this is a rather more complex and interesting test..." "OpenAl is asking the model a probabilistic question, not a deterministic question. But the answer to that question IS deterministic

- Benedict Evans, The Deep Research Problem

# Temporal & AI | Determinism Challenges

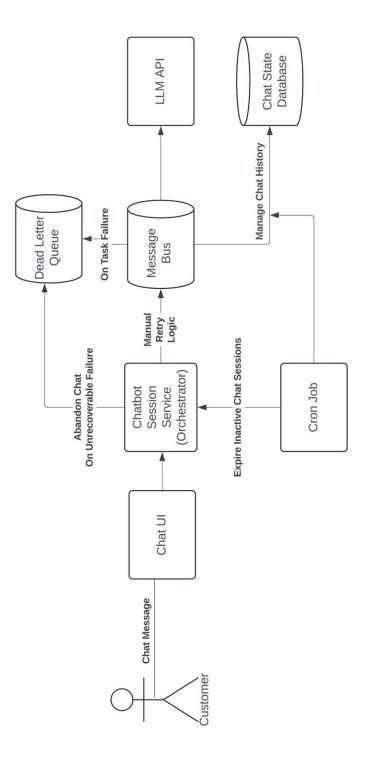


### Temporal & Al | Scalability Challenges

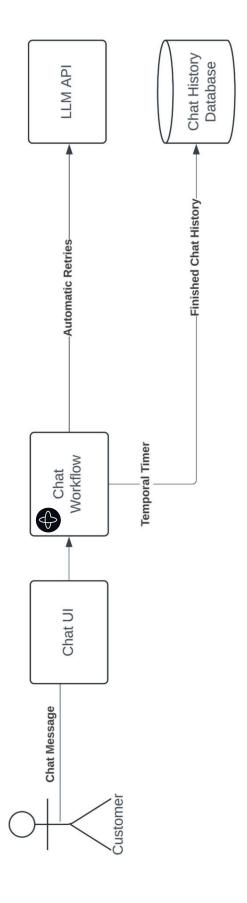
"I've helped lots of people build agents that can run on their laptop and do something cool. But the real challenge people struggle with is scaling it, making it durable, and getting to production."

- Overheard from an Al Architect

# Al Agents | Architecture before Temporal



## Al Agents | Architecture after Temporal



#### Architecture Elements | Agentic Al

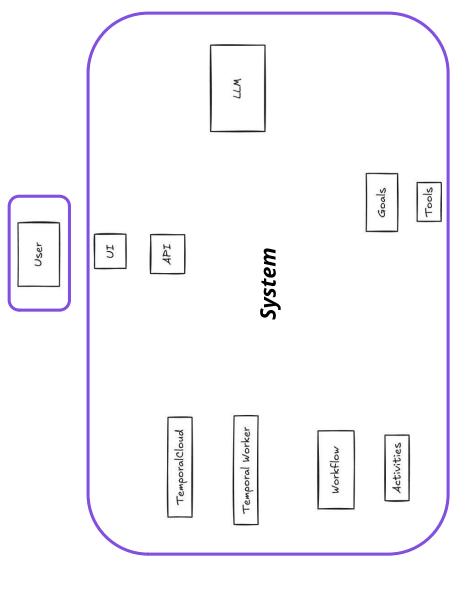
Temporal Worker

Workflow

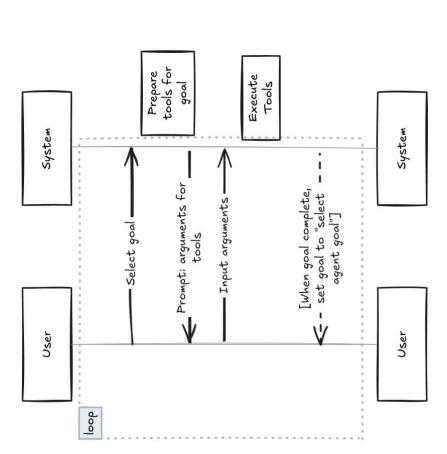
Activities

Tools

#### Architecture Elements | Agentic Al



#### Interaction Model | User <-> System

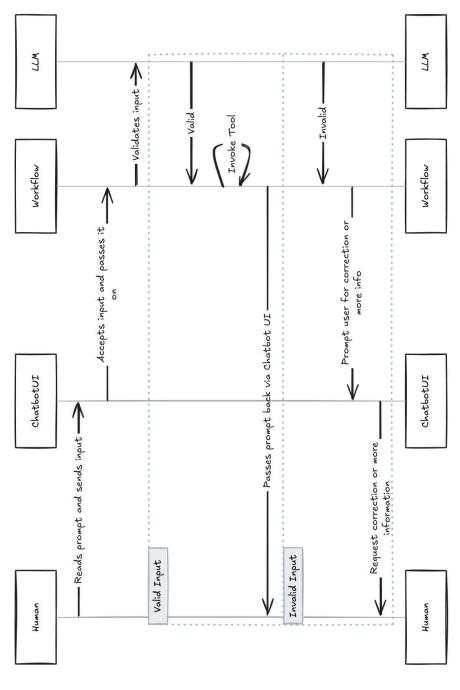


#### **Key Terms:**

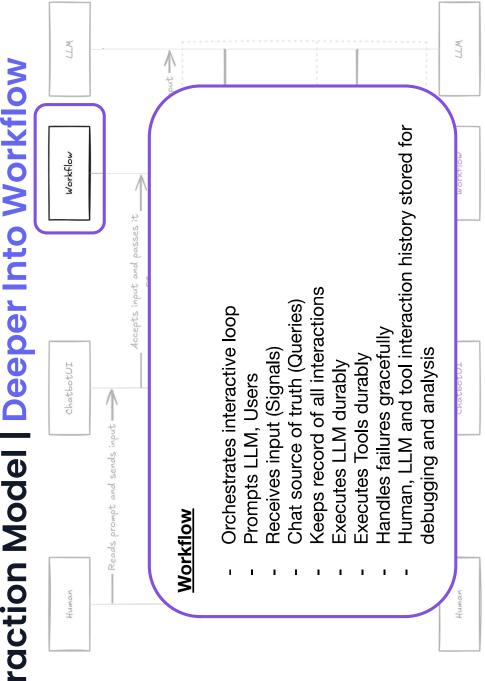
- User: a person who wants to take action
- System: Temporal + AI + Goals + Tools
- Goal: something the user wants to finish
  - Made up of one to many tools
- Tool: a custom capability our system has onteract with public and private data

sources or APIs

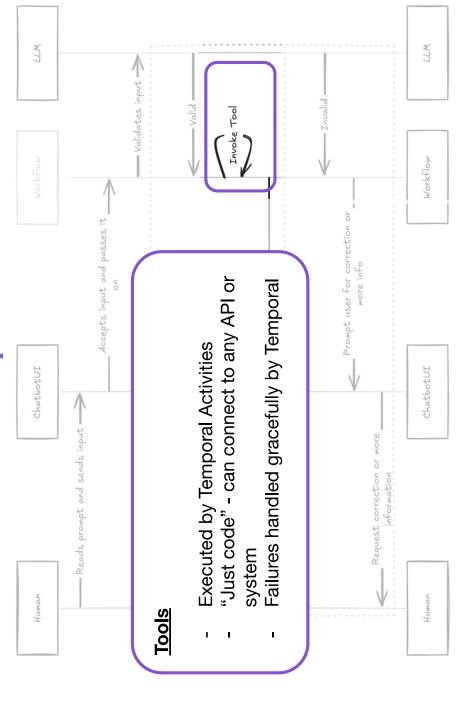
#### Interaction Model | Deeper



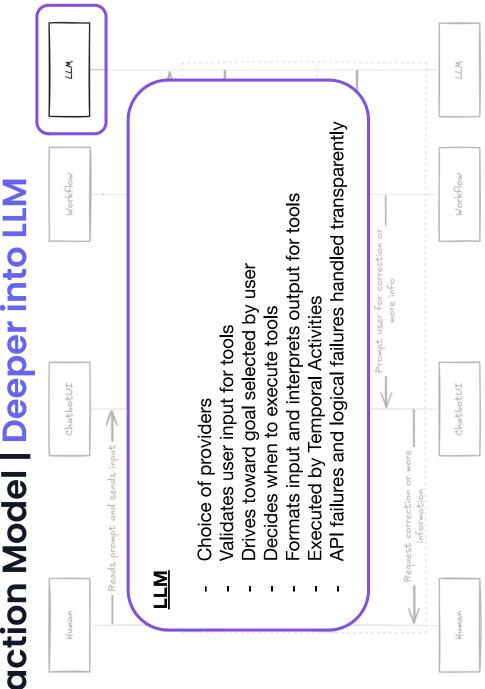
# Interaction Model | Deeper Into Workflow



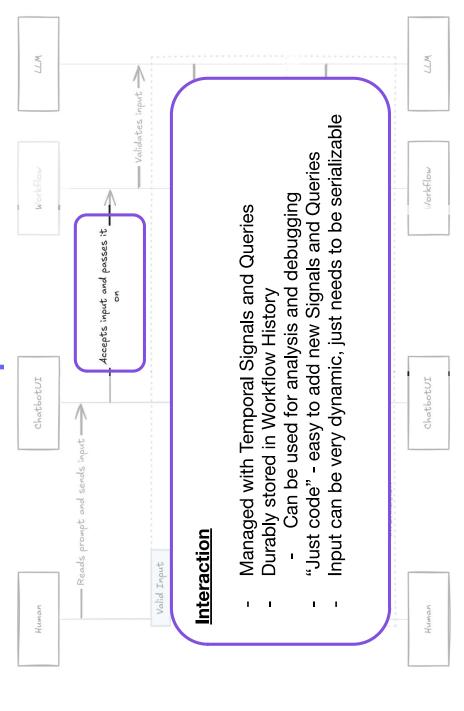
#### Interaction Model | Deeper into Tools



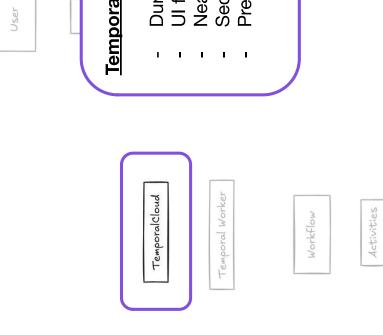
#### Interaction Model | Deeper into LLM



# Interaction Model | Deeper into Interaction



## Architecture Elements | Temporal Cloud



#### **Temporal Cloud**

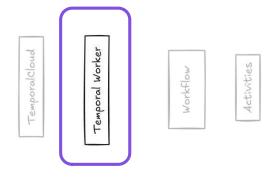
- Durable State UI for visibility & management Near infinite scalability
- Security/Encryption Predictable, low latency

Goals

Tools

## Architecture Elements | Temporal Cloud





#### **Temporal Worker**

- Initializes LLM & User interaction
- Provides interaction structure
- "Bones and Brain"
- Extremely durable, stateless (state is in Cloud)
- Many languages/SDKs supported
- Python, Go, TS/JS, Java, .NET...
- All with the same Temporal features
- Simply write the steps you want in code
- Tests are simply your language's test framework

Tools

# Architecture Model | Agentic Al Complete

