Composing an AI Symphony

Minh Phan
July 2025

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Prelude

NIDA Parade Theatre

Bathurst Memorial Entertainment Centre
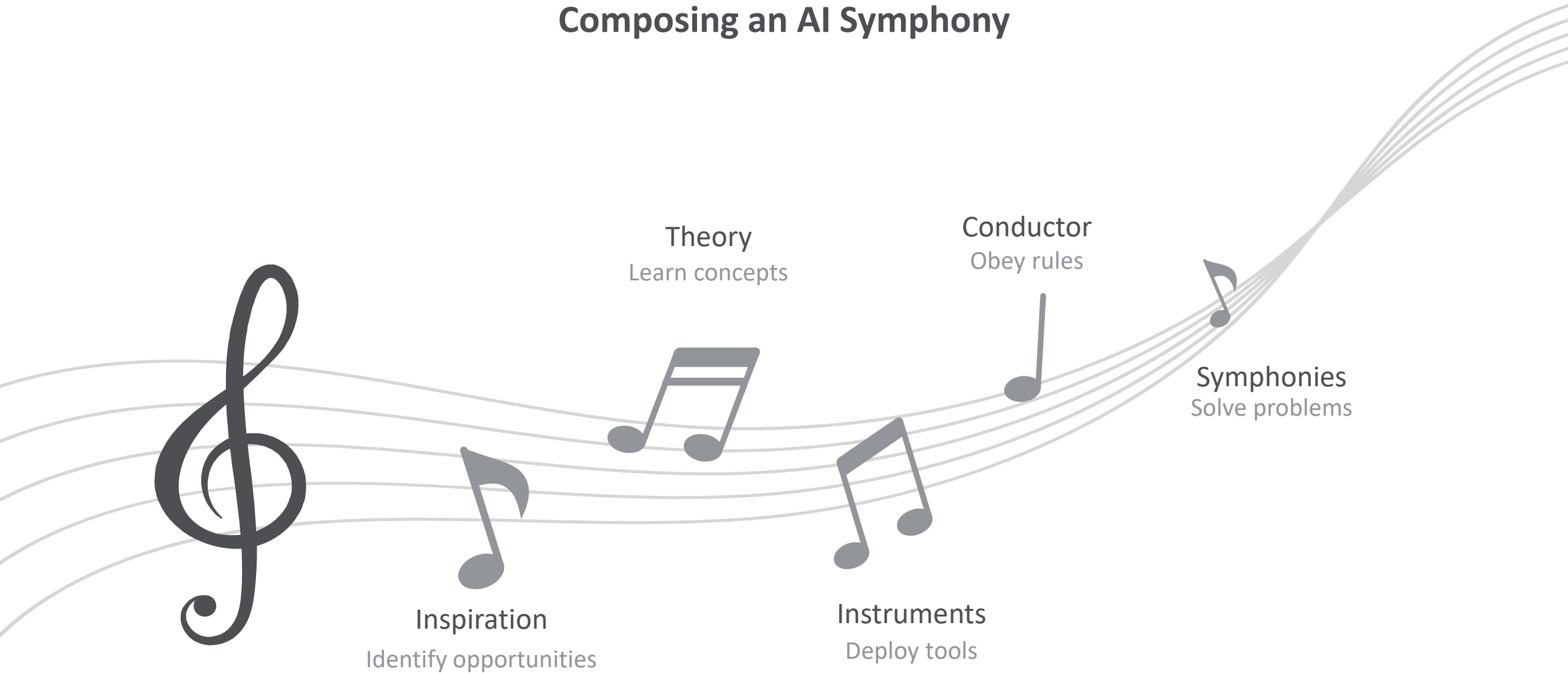

Sydney Comedy Festival

"I'm an Actuary"

Prelude

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Composing an AI Symphony

Theory
Learn concepts

Conductor
Obey rules

Symphonies
Solve problems

Inspiration
Identify opportunities

Instruments
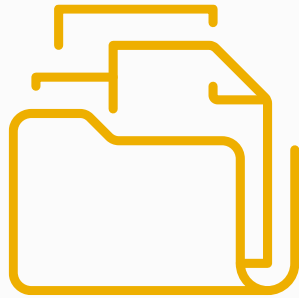Deploy tools

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Finding Inspiration

Inspiration

Identify opportunities

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Finding Inspiration

Underused
Unstructured Data

High Volume
Manual Processes

What do you **wish** AI could do for you?

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Craft an inspiration wall

Analytics

Fuzzy Matching

Classification

Clustering

Feature Engineering
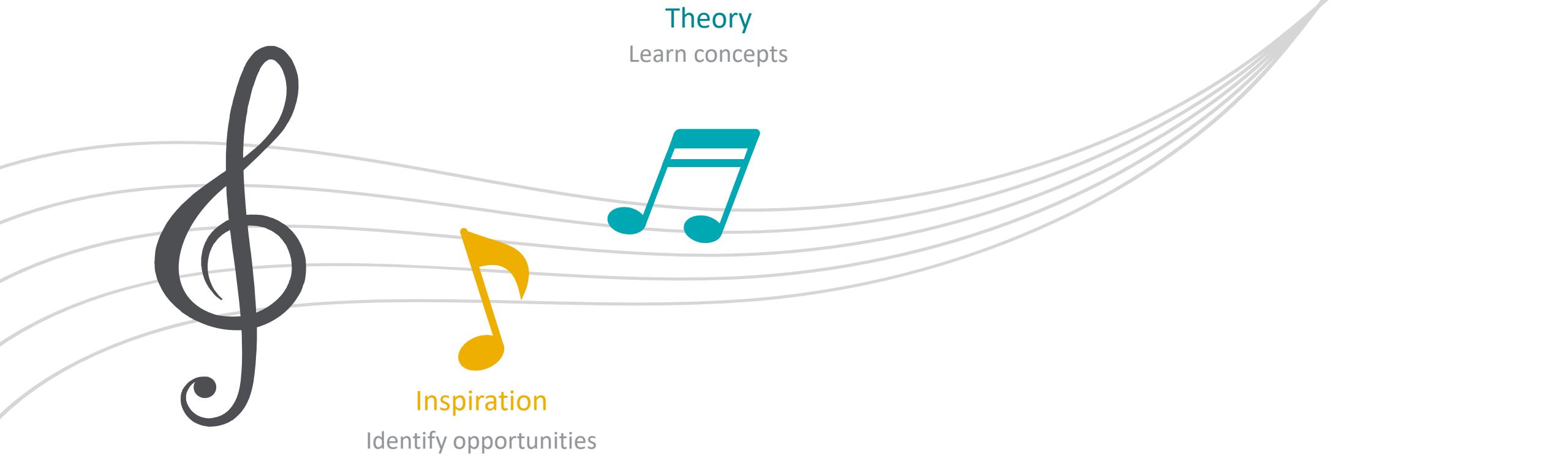
Assistants

Specialist Bot

Tech Review Bot

Automation

Code Conversion Framework

Document Ingestion

Browser Automation

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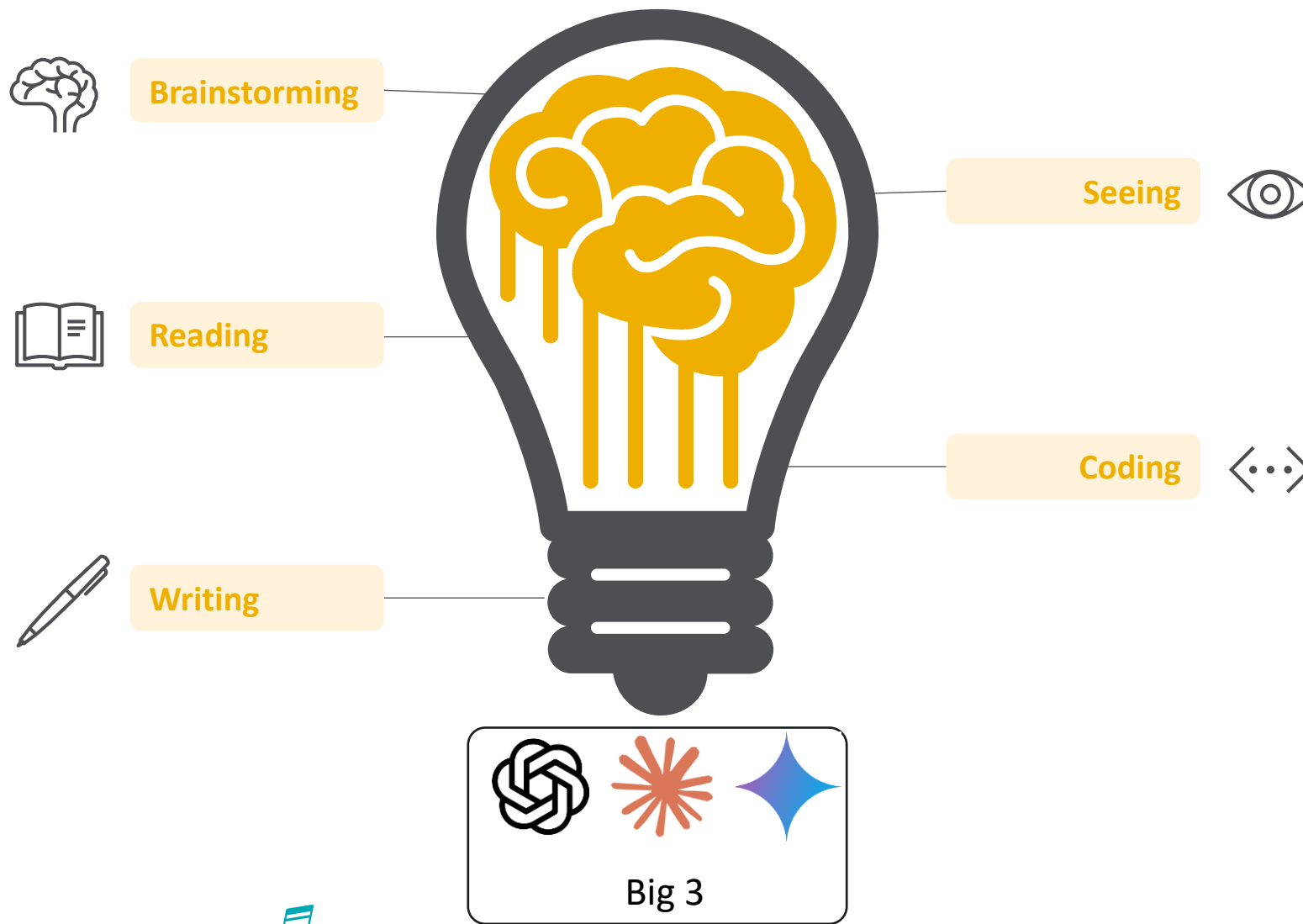# Composing an AI Symphony

Theory
Learn concepts

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Identify opportunities

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Try the tools!

Brainstorming

Reading

Writing

Seeing

Coding

Try the tools!

Brainstorming

Reading

Writing

Seeing

Coding

Big 3
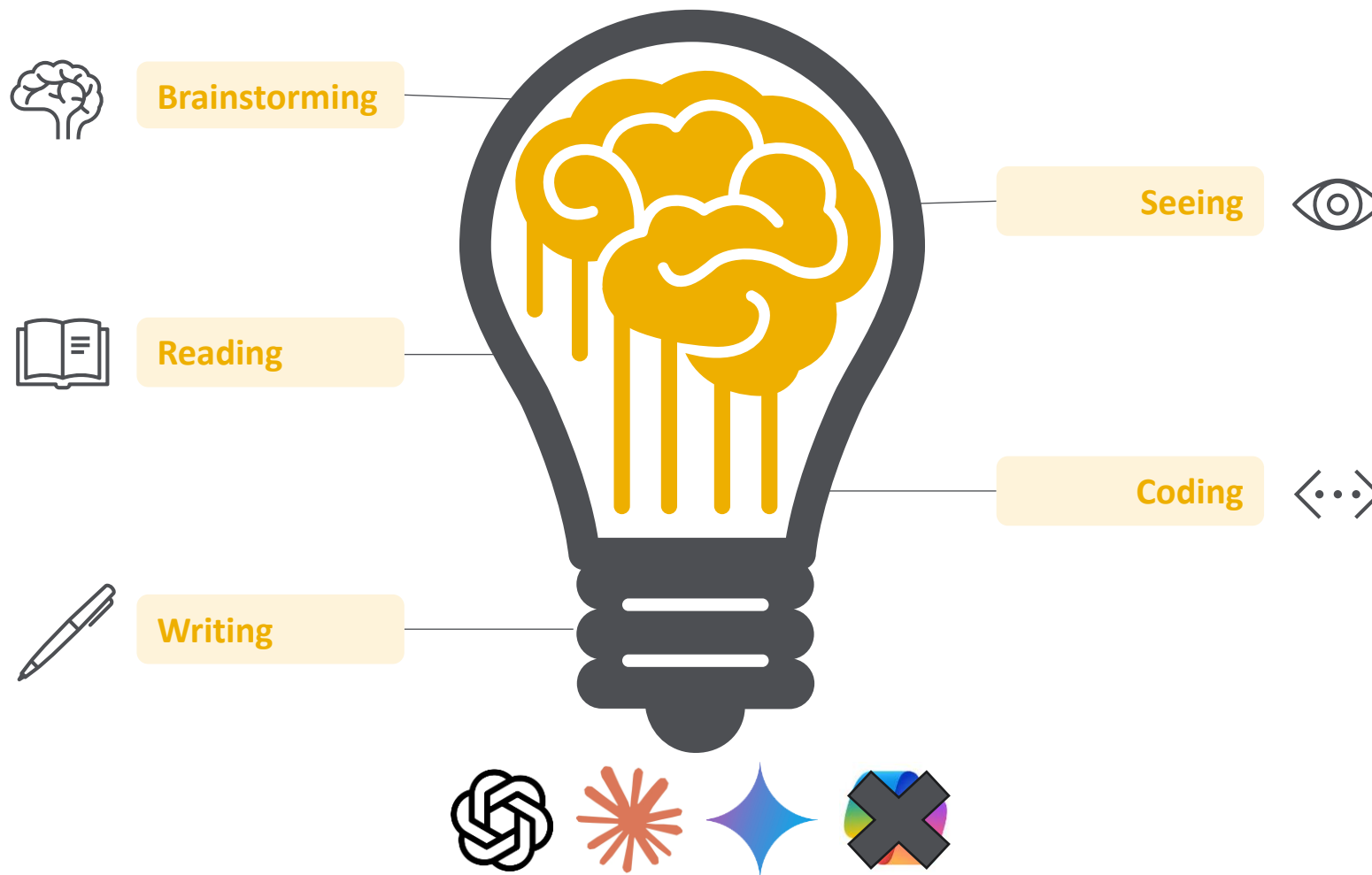
5 Concepts to Build AI Systems

Access
Vendor API
Open Weights

Types
Embeddings
Foundation
Reasoning

Knowledge
Prompt Stuffing
RAG
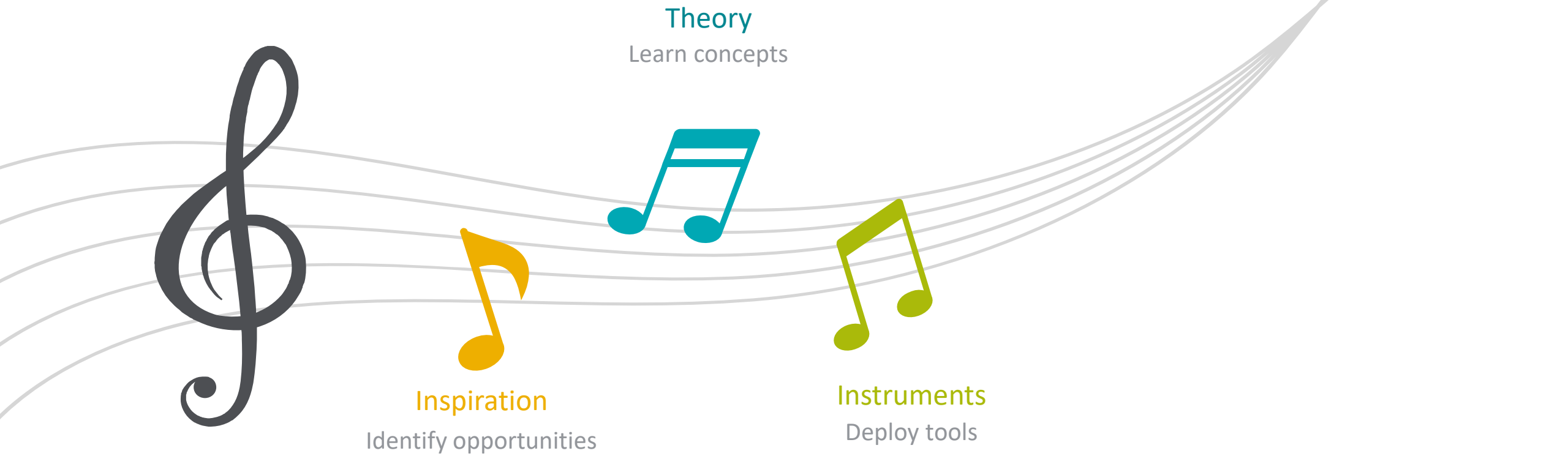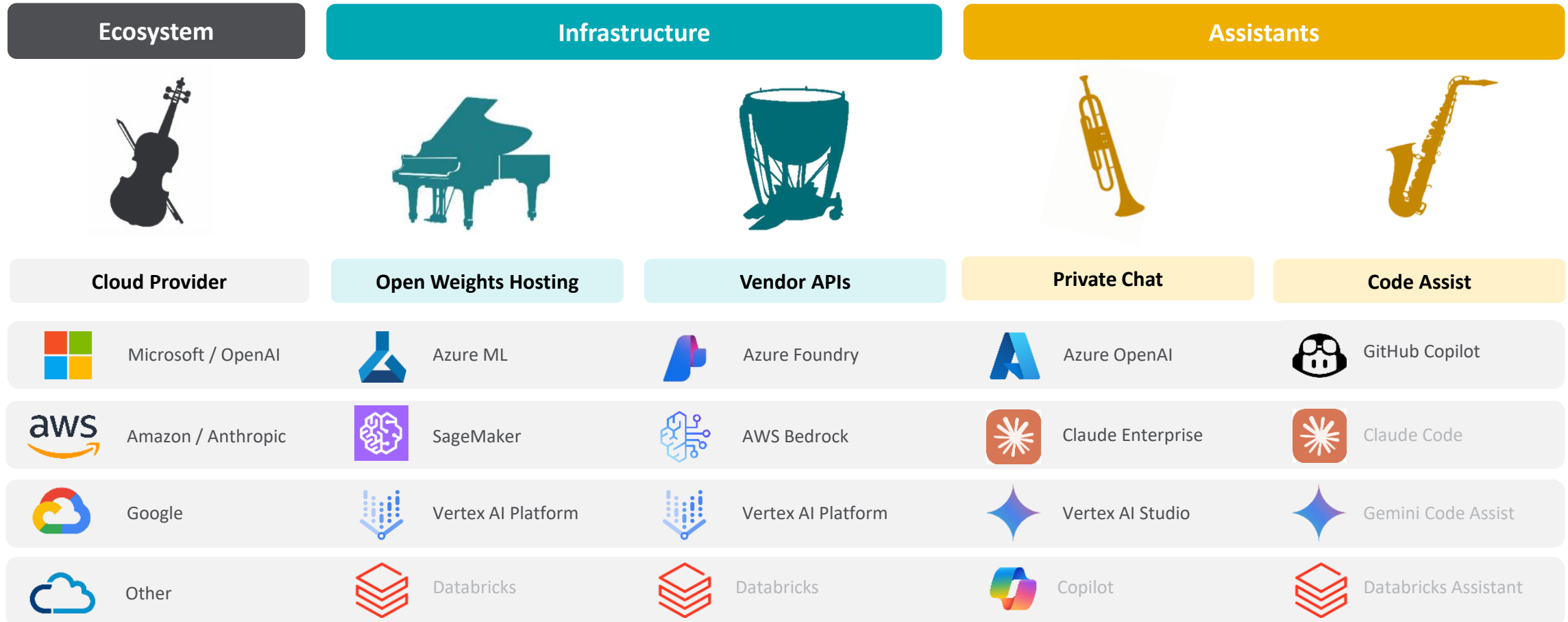Fine-tuning

Tools
Pure Python
Tool Calling
MCP

Agentic Patterns
Parallelisation
Routing
Chaining
Evaluation

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Selecting instruments

Ecosystem	Infrastructure		Assistants	
Cloud Provider	**Open Weights Hosting**	**Vendor APIs**	**Private Chat**	**Code Assist**
Microsoft / OpenAI	Azure ML	Azure Foundry	Azure OpenAI	GitHub Copilot
Amazon / Anthropic	SageMaker	AWS Bedrock	Claude Enterprise	Claude Code
Google	Vertex AI Platform	Vertex AI Platform	Vertex AI Studio	Gemini Code Assist
Other	Databricks	Databricks	Copilot	Databricks Assistant

Inspiration Theory **Instruments** Conductor Symphonies

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Google	Vertex AI	Vertex AI Studio	

Inspiration   Theory   Instruments   Conductor   Symphonies

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Inspiration   Theory   Instruments   Conductor   Symphonies

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Google	Vertex AI		

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Some of my personal favourite instruments

Front End
NextJS   Javascript

Back End
FastAPI   Python

Deployment
Docker

(Vector) Databases
Supabase
ChromaDB   qdrant

Packages
n8n   Pydantic AI
LangChain   Llama Index
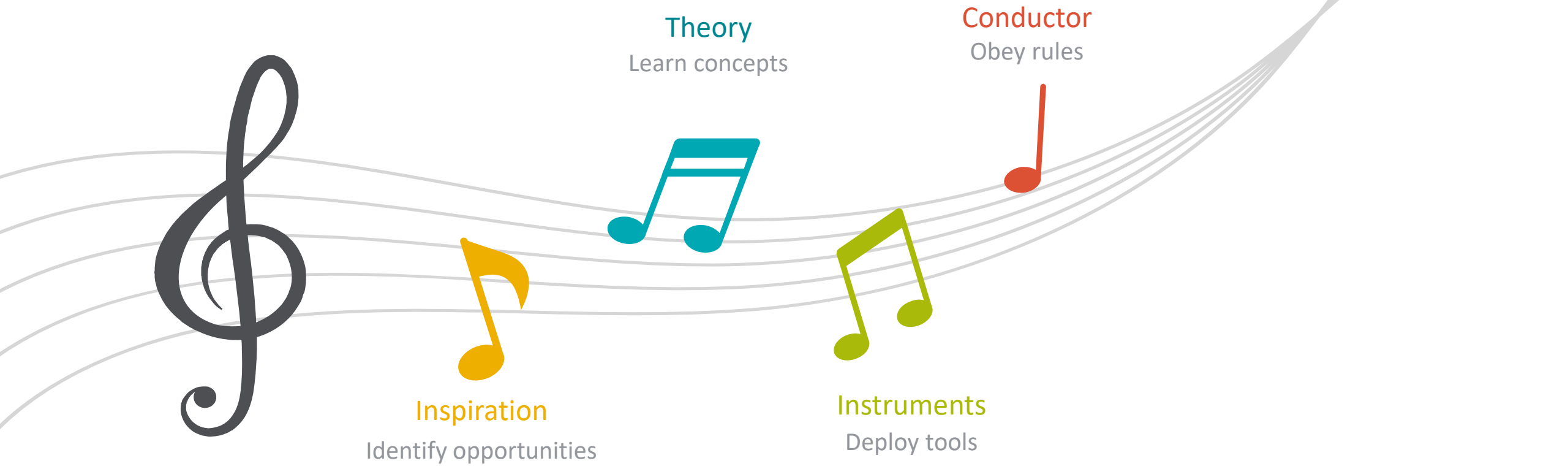
Coding
Cursor   VS Code

Host on Private Cloud
aws

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Getting Access

Company	Business Unit	

Stakeholders to Convince

Legal	Technology Team	Centre of Excellence
Risk	Data Science	Governance

How?

Understand legal obligations	Demonstrate business value
Privacy Statements	Governance compliance
Establishing Governance	Visio Diagram

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Getting Access

1

Company

2

Business Unit

Stakeholders to Convince

Company	Business Unit	
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An important delineation

Company Policies

Legal Obligations

Navigating Australian Laws

Competition and Consumer Act 2010
Amended February 2025

Discrimination Acts
Sex, Age, Disability, Racial

Privacy Act 1988
Amended December 2024

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Navigating EU AI Act

	Definition	Insurance Task	Compliance Summary
Unacceptable	AI uses that exploit vulnerabilities, manipulate individuals, or involve social scoring	NA	NA
High	AI systems in "Annex III" used for essential decision-making affecting rights, usually subject to existing regulation	Underwriting, Pricing, Risk Scoring	Lifecycle risk management Data governance, logs, documentation Human oversight
Limited	Non-high-risk systems that have a low consumer impact	Chatbots, claims triaging	Disclose AI usage to users at first interaction
Minimal	Other AI systems – mostly internal or support tools with no regulation	Internal analytics, document translation, support tools	No legal obligations

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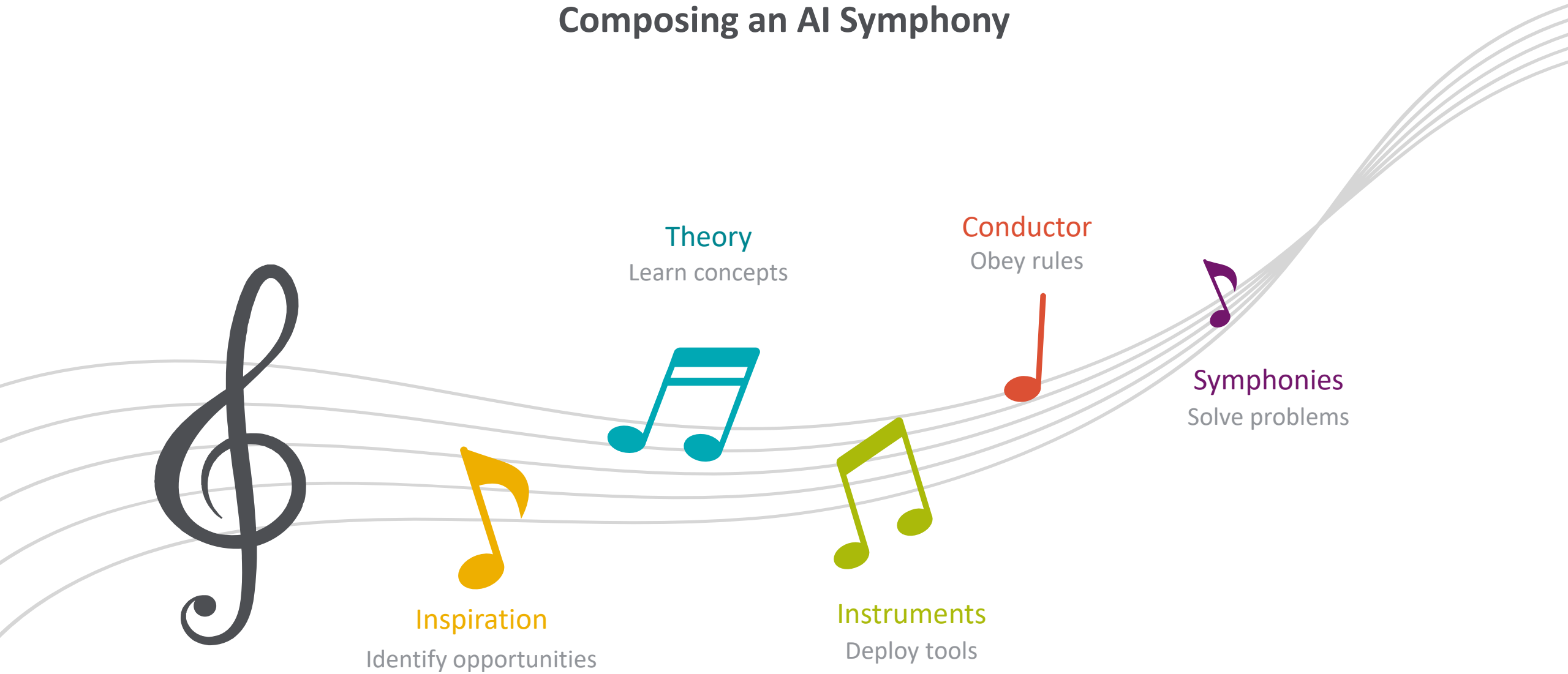
Étude No. 1 – Improving Claims Classification

Description	Classification
Front bottom glass door **kicked** or **smashed** in	Burglary
Burst pipe in the ceiling	Water Damage
Microwave blew due to **power overload**	Fusion
Eddie **dropped his Messina** onto the carpet	Accidental Damage
Homer lights his certificate with his **zip lighter** accidentally	Fire

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Étude No. 1 – Improving Claims Classification

Improve your **models** by improving your **data**.

Description	Classification
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Nocturne No. 2 – Clustering Claims

Improve **claims analytics** and **operations** by semantic clustering

✖ Historical Claim

✖ "Bad" Claim

✖ Claim A – 1 of 6 of neighbours were a "bad" claim

✖ Claim B – 4 of 6 of neighbours were a "bad" claim
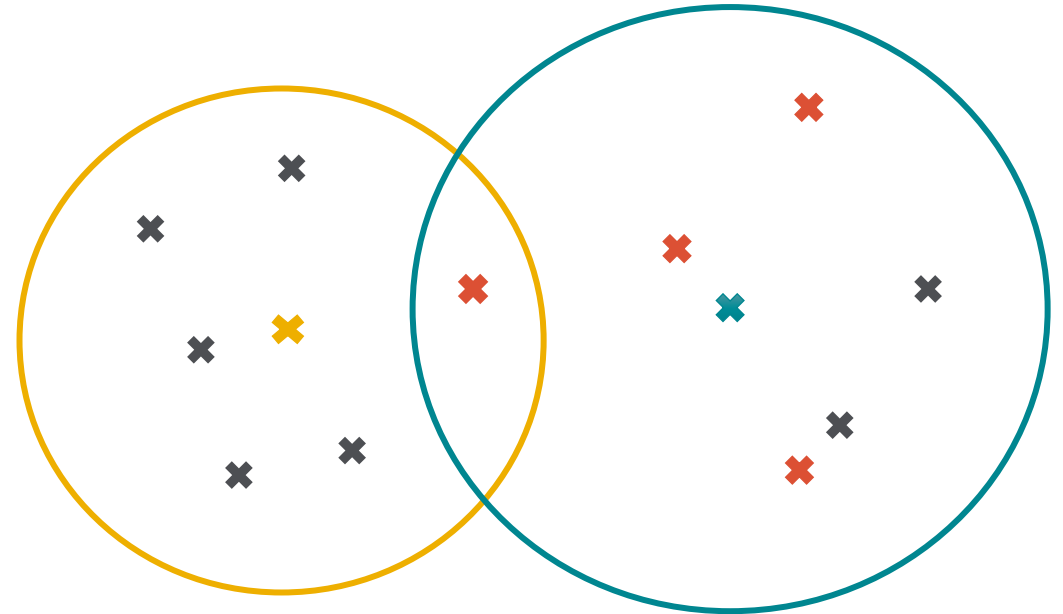
Claim	Structured Attributes	Frequency Risk Index	Case Estimate Median
A	...	0.167	$18k
B	...	0.667	$45k

Rhapsody No. 3 – Specialist Bot

Create **specialists** by attaching **domain knowledge**

User: What is the minimum asset requirement for a Commercial Property policy?

According to our guidelines, a Commercial Property risk requires a combined declared value of at least AUD$5 million for Material Damage and Business Interruption coverage. This ensures the policy covers sufficiently large exposures.

Type a message

Underwriting Guidelines – Commercial Property

✕

"Scope: Commercial Property is defined as business with total declared values of at least AUD$5 million for Section 1 (Material Damage) and Section 2 (Business Interruption) combined.

Underwriters must adhere to local regulations and compliance requirements when issuing policies. The guidelines are subject to change based on evolving market conditions and reinsurance treaties."

Clicking the "citation" icon opens a pop-up showing the exact reference, with the relevant text highlighted

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Sonata No. 4 – Document Ingestion

Easily structure your data

Before

Insurance Proposal Prepared Exclusively For:

Jack Johnson & Diane Johnson
123 Main Street
Dallas, TX 78224

Prepared By

Kyle Henderson
(214) 555-5556
support@customquoteform.com
February 23, 2017

Thank you for the opportunity to assist you in assessing your personal insurance needs. I am pleased to present to you the following personal insurance proposal:

HOA Policy - 123 Main Street

Coverage A - Dwelling	$285,000
Coverage B - Other Structures	$5,700
Coverage C - Personal Property	$28,500
Coverage D - Loss of Use	$57,000
Coverage E - Personal Liability	$50,000
Coverage F - Medical Payments to Others	$2,000

Discounts:
New Roof Discount, Auto Companion Discount, Advanced Quote Discount, Alarm Discount, Loyalty Discount, Claim Free Discount

Endorsements:
Water Backup, Foundation Coverage, Accidental Water Damage, Extended Replacement Cost, Jewelry, Window/Glass Coverage, Contents Replacement Cost, Dwelling Replacement Cost

	Option 1	Option 2	Option 3
All Perils Deductible	2%	3%	1%
Wind/Hail Deductible	2%	3%	1%
Named Storm Deductible	2%	3%	1%
Flood Insurance	$246	$246	$246
Premium	$1,236	$1,336	$1,136
Agency Fee	$75	$75	$75
Total	**$1,557**	**$1,657**	**$1,457**

After

Location

Name	Jack Johnson
Street Number	123
Street Name	Main St
City	Dallas
State	Texas
Zip Code	78224

Limits

Dwelling	$285,000
Other Structures	$5,700
Personal Property	$28,500
Loss of Use	$57,000
Personal Liability	$50,000
Medical Payments	$2,000

Discounts

New Roof	Y
Auto Comparison	Y
Advanced Quote	Y
Alarm	Y
Loyalty	Y
Claim Free	Y

Endorsements

Water Backup	Y
Foundation	Y
....	...
Windows/Glass	Y
Contents Replacement	Y
Dwelling Replacement	Y

Inspiration · Theory · Instruments · Conductor · **Symphonies**

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Concerto No. 5 – Browser Automation

Efficiently write browser **automations**

Record actions

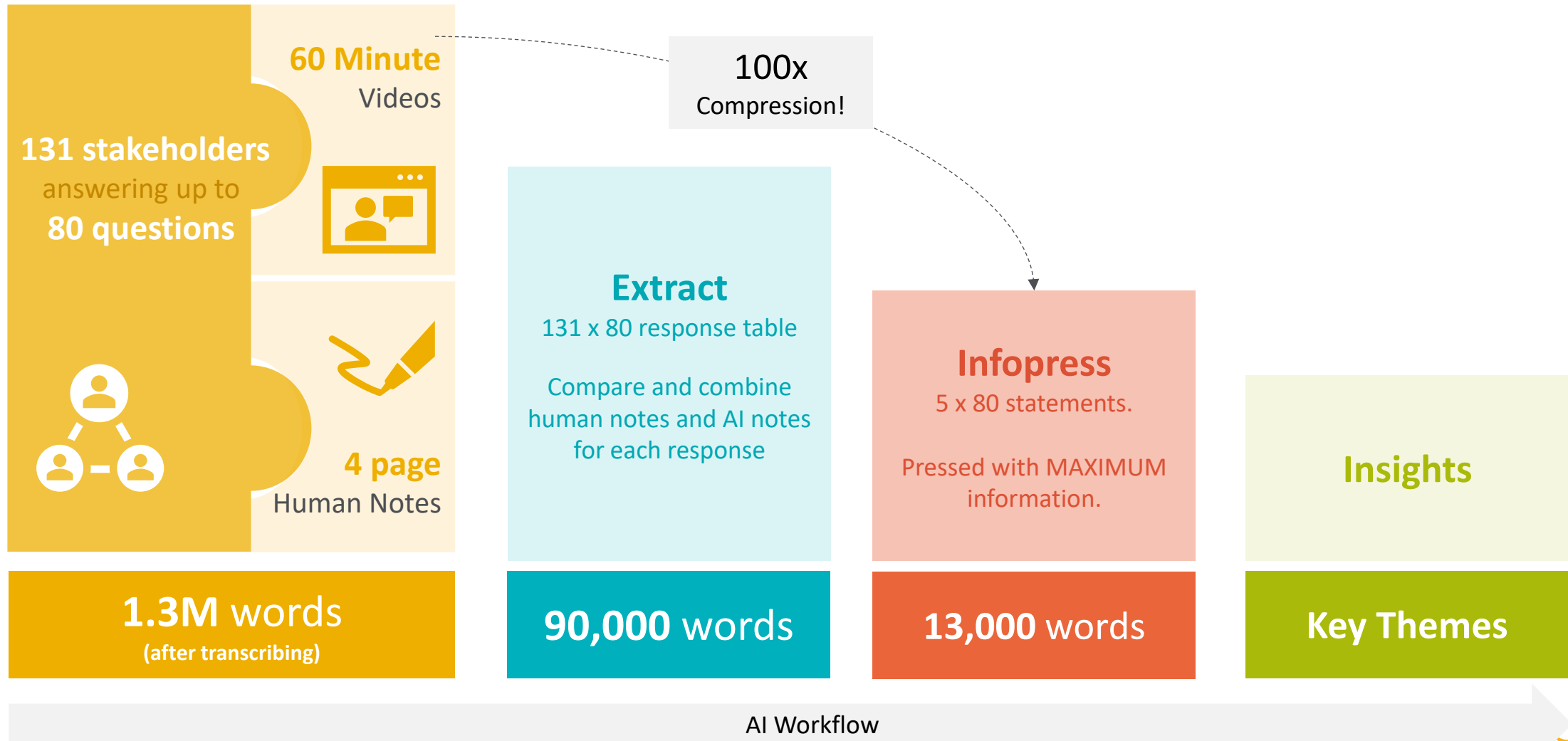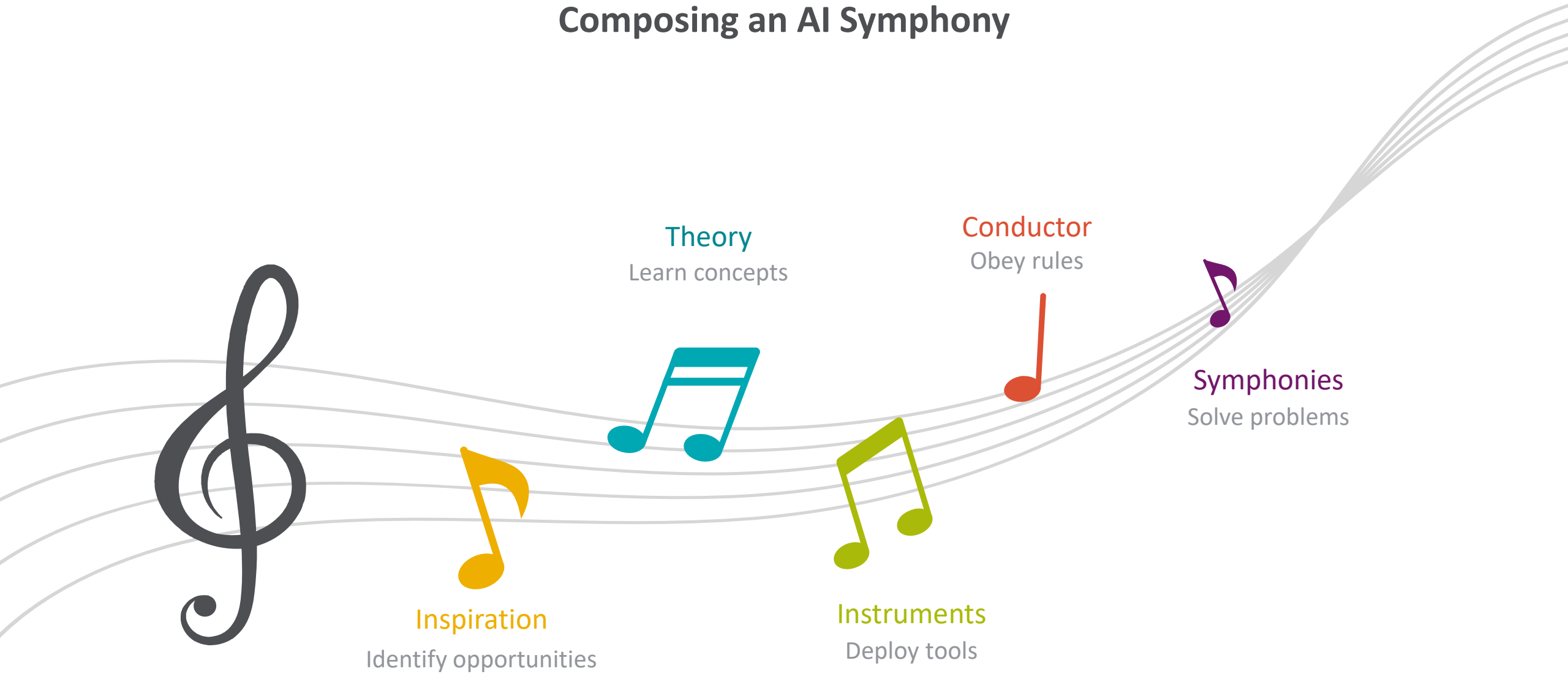| Clicks	Input Values
HTML	Screenshots

Write Code

Base Code	Refactored Template

Symphony No. 6 – Document Insights At Scale

Efficiently get **insights** from **unstructured data at scale**

131 stakeholders answering up to **80 questions**

60 Minute Videos

4 page Human Notes

100x Compression!

Extract
131 x 80 response table

Compare and combine human notes and AI notes for each response

Infopress
5 x 80 statements.

Pressed with MAXIMUM information.

Insights

1.3M words
(after transcribing)

90,000 words

13,000 words

Key Themes

AI Workflow

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