

BURR SUTTER

SEPTEMBER 23, 2025



<https://bit.ly/golden-path-ai>

# paving THE golden path

PLATFORM ENGINEERING

IN THE AGE OF AI







<https://bit.ly/golden-path-ai>





<https://bit.ly/golden-path-ai>







































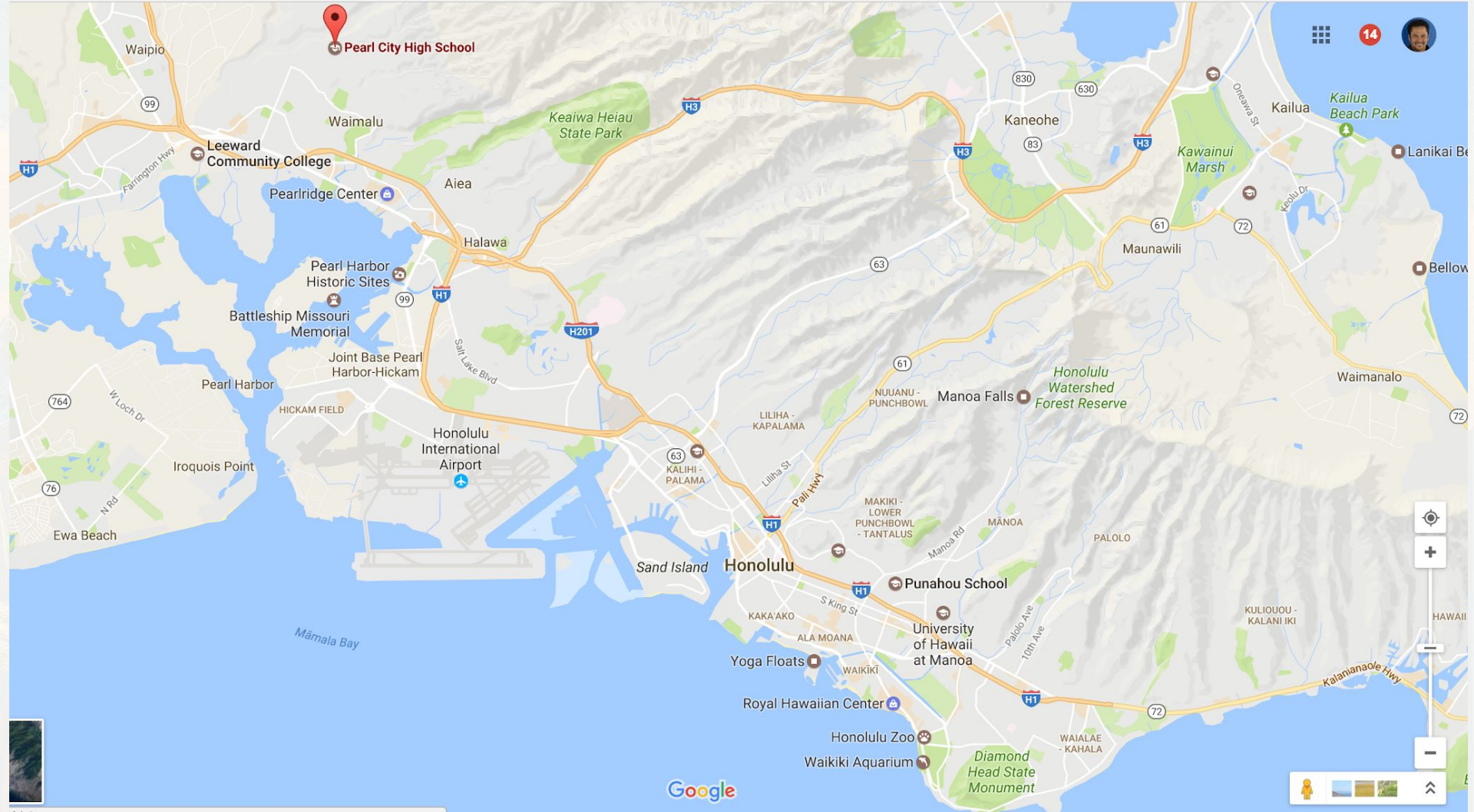














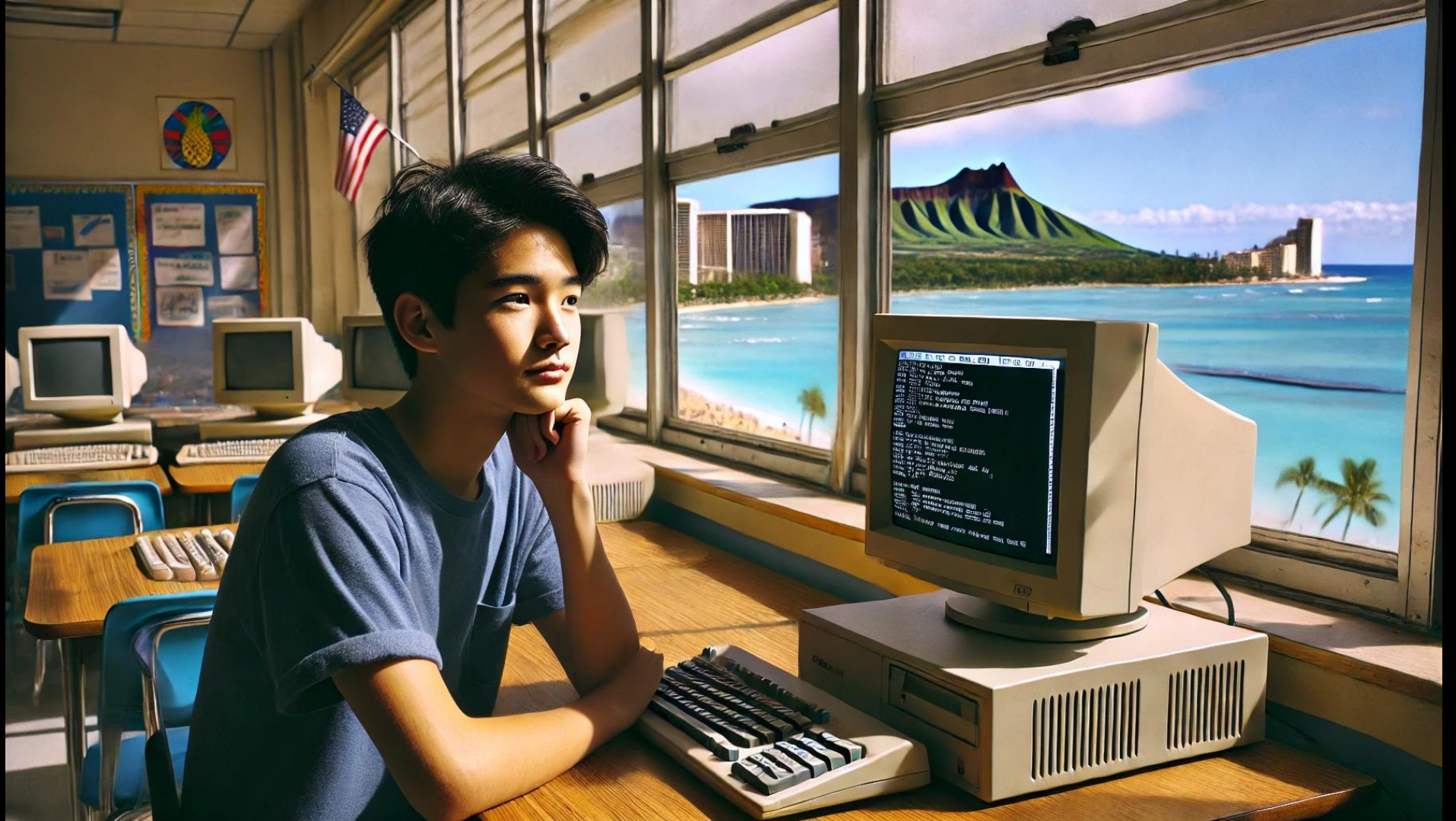
















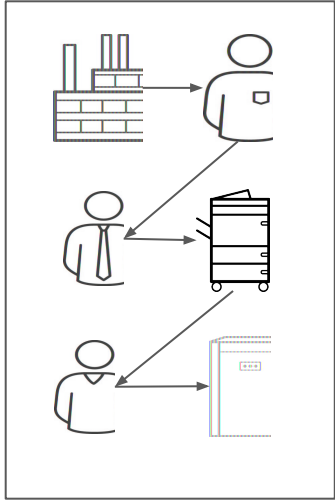






# Business & IT: 80's to Future

ChUI



80's





A top-down view of a brown cardboard box. The box is open, revealing a stack of approximately ten blank white sheets of paper inside. A white rectangular label with the word "INBOX" printed in bold black capital letters is affixed to the front edge of the box. The background is a light-colored wooden surface.

An open cardboard box is shown from a top-down perspective, lying flat on a wooden surface. The box is made of brown cardboard and is open, revealing a white sheet of paper with horizontal lines inside. A label is affixed to the front of the box, featuring the word ***OUTBOX*** in a bold, black, italicized sans-serif font.[illegible]

RUBROFOLIO	GRATUUM	REVENUS	ANNUUS
Gratuus folio gratuus gratuus gratuus	1.551	1551	236-21
Gratuus folio gratuus gratuus gratuus	506	506	29-127
Gratuus folio gratuus gratuus gratuus	1551	1551	77-151
Gratuus folio gratuus gratuus gratuus	1551	1551	22-36

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13:45	13:58	14:09
14:20	14:33	14:44
14:55	15:08	15:19
15:30	15:43	15:54
16:05	16:18	16:29
16:40	16:53	17:04
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18:25	18:38	18:49
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# REPORT



The image shows a white sheet of paper with a 'REPORT' title and two pie charts. The pie charts are composed of five segments each, in various shades of blue. The paper is placed on a wooden surface, and a hand holding a pen is visible on the left side.

# INVOICE

Invoice Number. 6789

Date: November 9, 2001

**SELLER**

Seller Name  
1234 Eim St.  
Anytown, NY 12345  
555-123-4557

**BUYER**

Buyer Name  
5678 Oak St.  
Somewhere; CA 67990  
555-987-6543

DESCRIPTION	QUANTITY	UNIT PRICE	LINE
Item A	2	\$50.00	100.00
Item B	5	\$00.00	150.00
Item C	1	\$200.00	200.00
Item D	3	\$75.00	225.00

INVOICE SUBTOTAL: \$675.00

TAKES: \$54.00

SHIPPING: \$20.00

TOTAL AMOUNT DUE: **\$749.00**

Payment Terms: Net 30



# INVOICE

№ 1234

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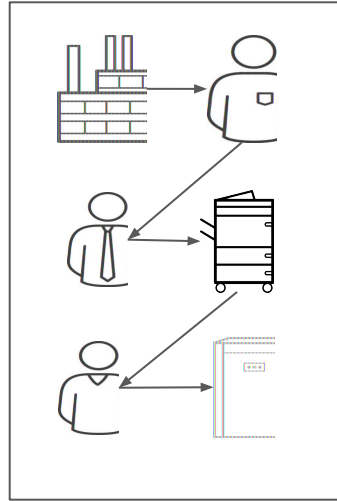
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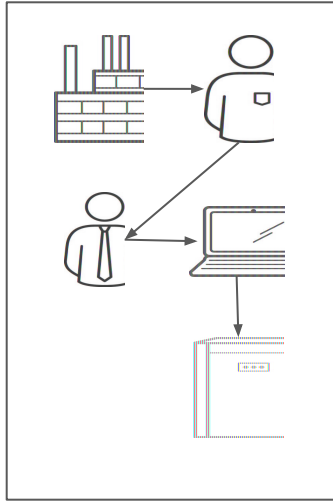
# Business & IT: 80's to Future

ChUI



80's

GUI



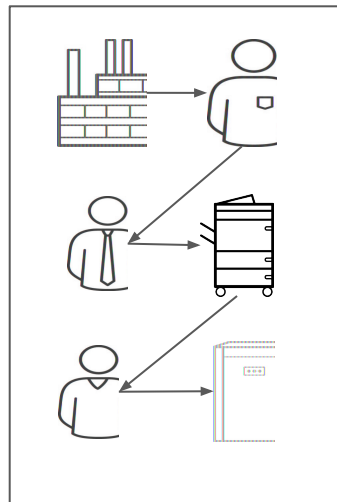
90's





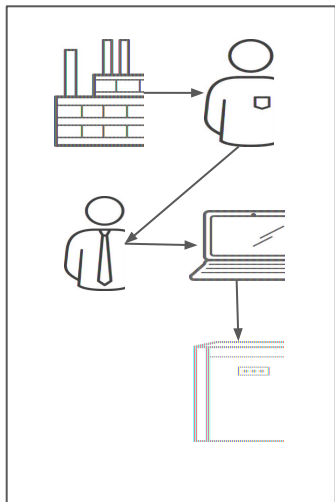
# Business & IT: 80's to Future

ChUI



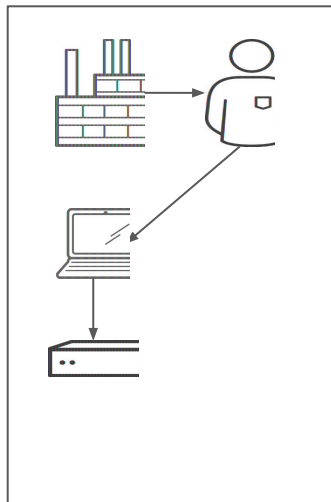
80's

GUI



90's

Web



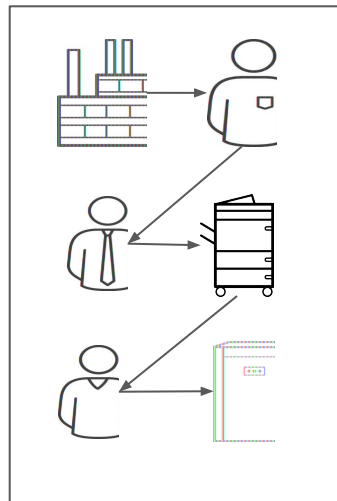
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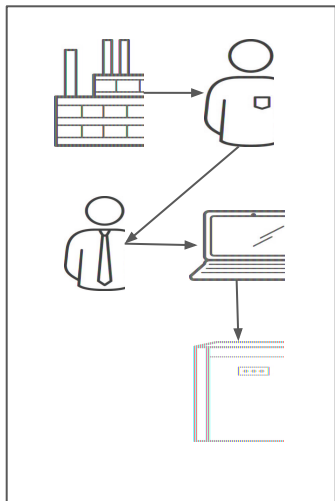
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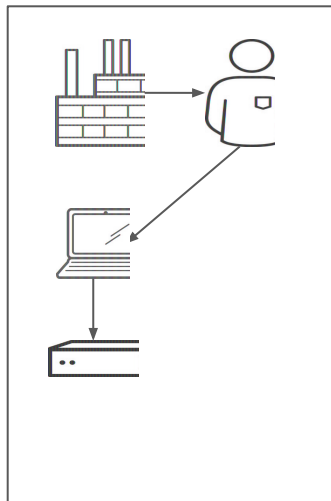
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GUI



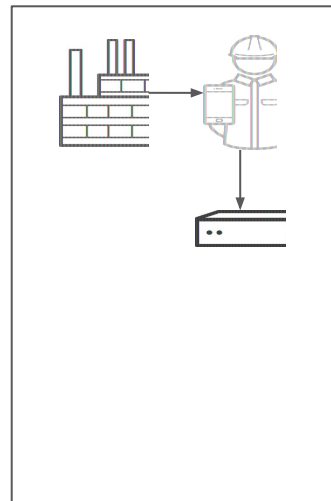
90's

Web



00's

Mobile



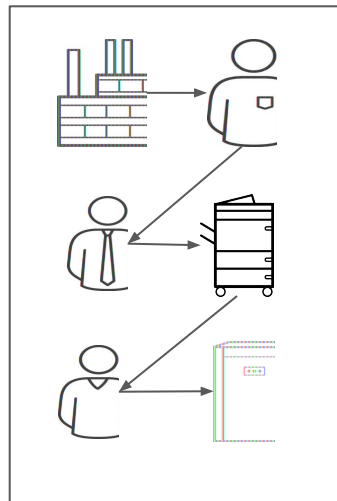
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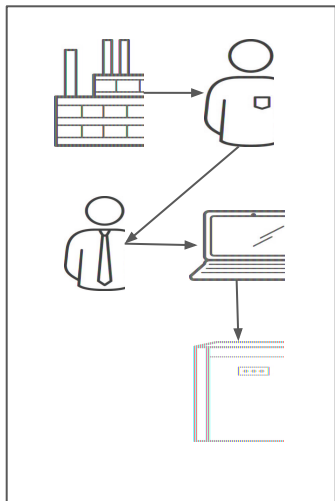
# Business & IT: 80's to Future

ChUI



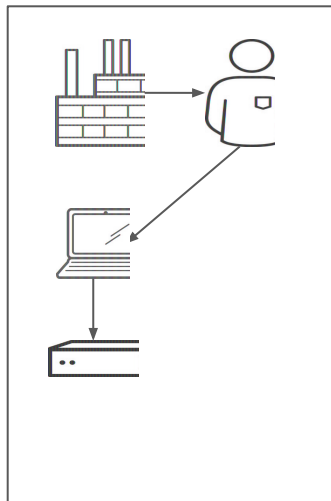
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GUI



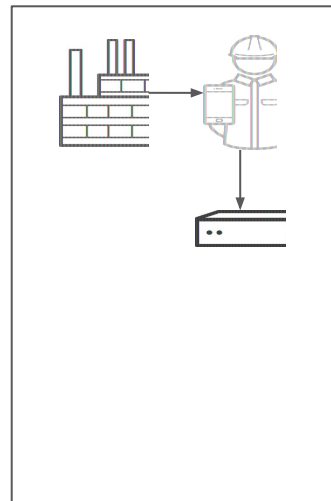
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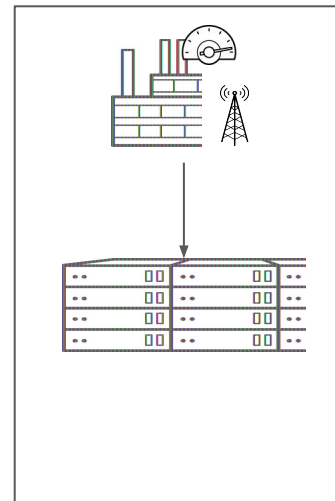
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Mobile



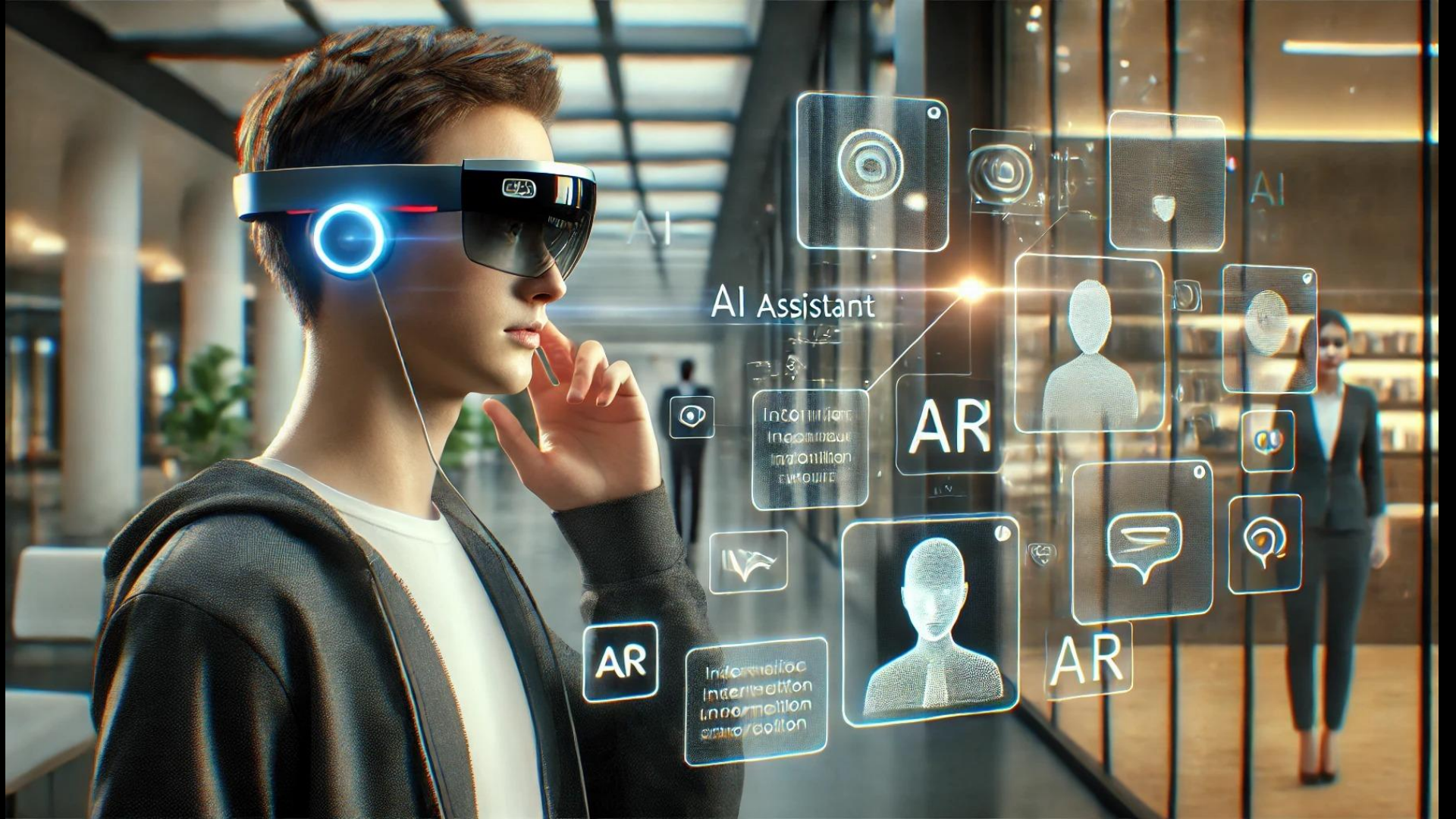
10's

Bots



20's





AI

AI Assistant

AR

AR

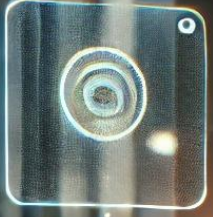
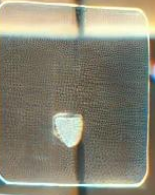
AR



Information  
Interaction  
Information  
Environment



Information  
Interaction  
Information  
Environment





































# Your Journey to LLM Awesomeness



**Prompt**

# Your Journey to LLM Awesomeness



Prompt



Structured  
Output



# Your Journey to LLM Awesomeness



**Prompt**



**Structured  
Output**



**Tools  
MCP**

# Your Journey to LLM Awesomeness



**Prompt**



**Structured  
Output**



**Tools  
MCP**



**RAG**



# Your Journey to LLM Awesomeness



**Prompt**



**Structured  
Output**



**Tools  
MCP**



**RAG**



**Patterns**

(chaining,  
LLM-as-a-judge,  
maker-checker,  
agent-coder,  
ReAct)

# Your Journey to LLM Awesomeness



**Prompt**



**Structured  
Output**



**Tools  
MCP**



**RAG**



**Patterns**

(chaining,  
LLM-as-a-judge,  
maker-checker,  
agent-coder,  
ReAct)



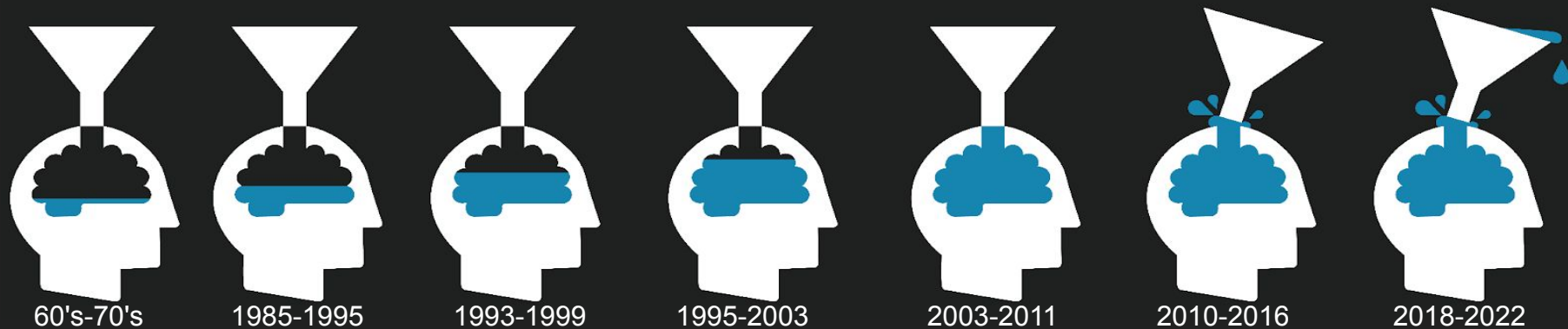
**Agents**

(planning,  
orchestration,  
retries, error-  
correction)



**Why** Platform Engineering?

# Overloaded





# Overloaded

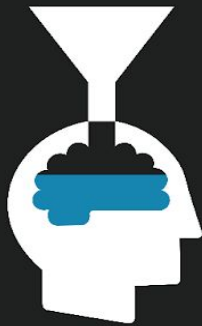
COBOL  
JCL/WFL  
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Centralized



60's-70's



1985-1995



1993-1999



1995-2003



2003-2011

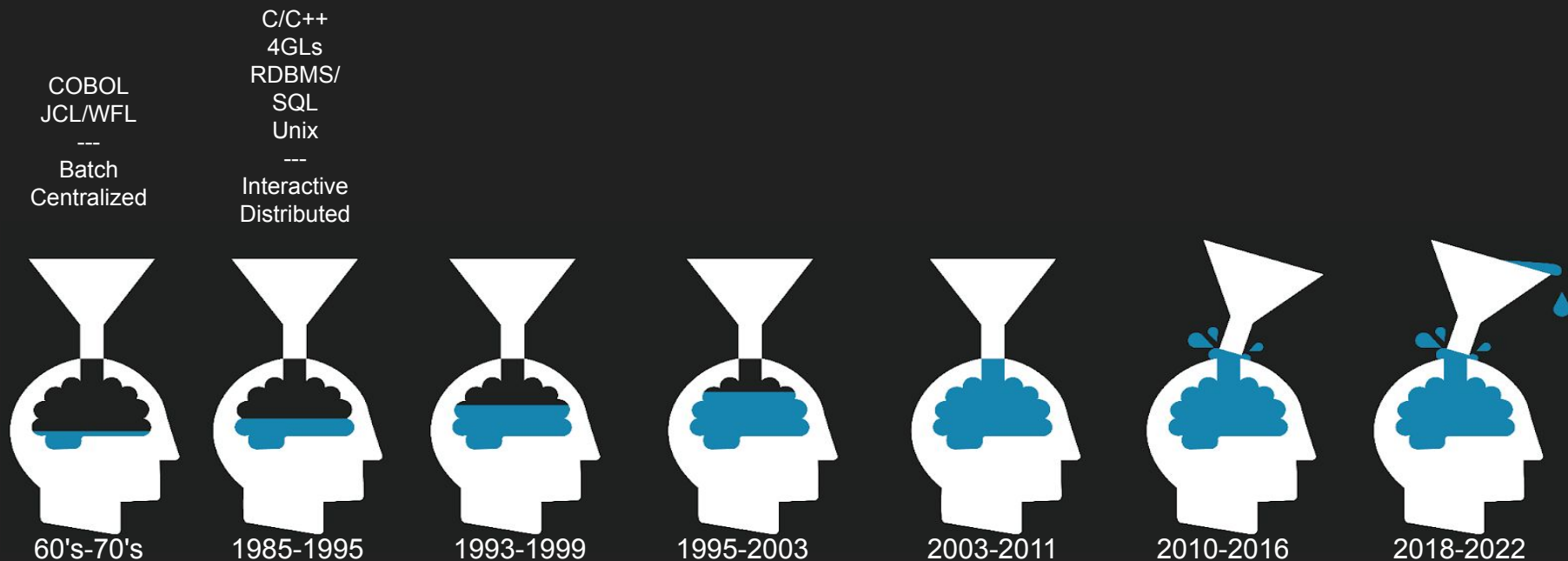


2010-2016



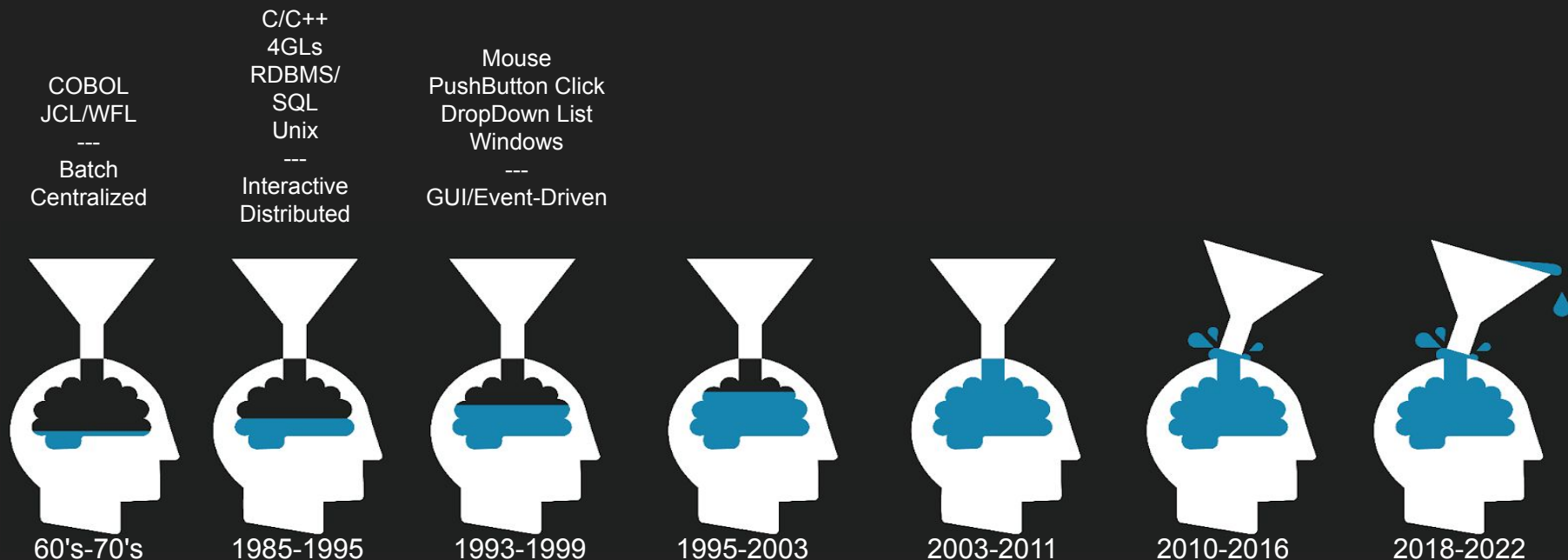
2018-2022

# Overloaded

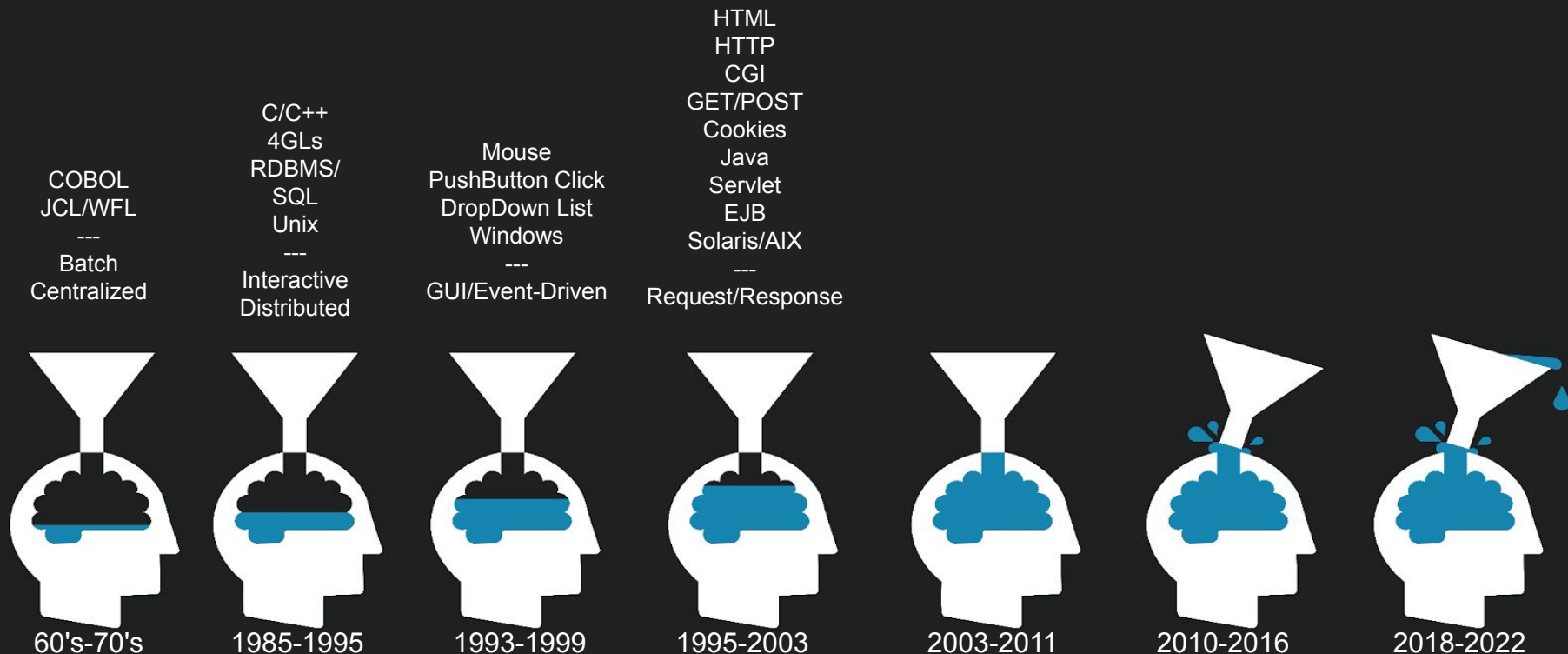




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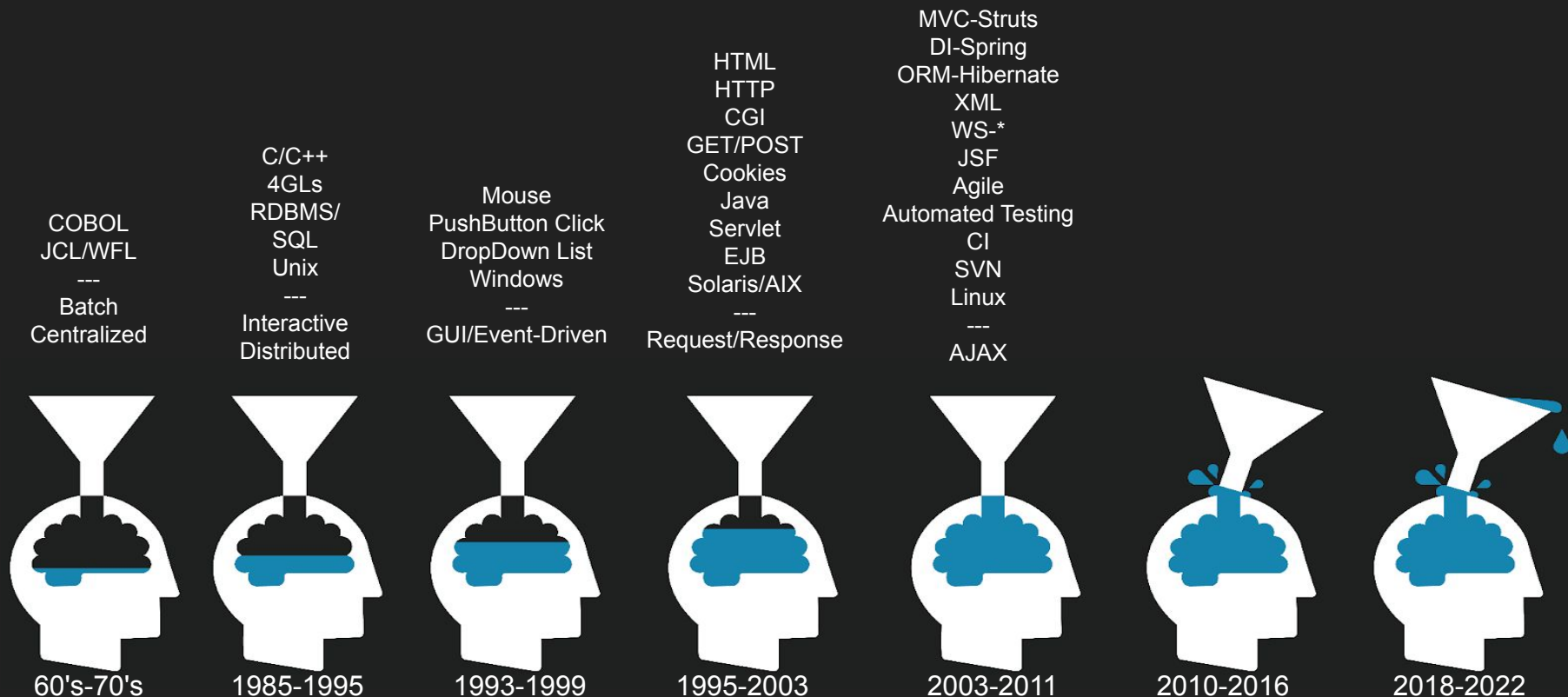


# Overloaded

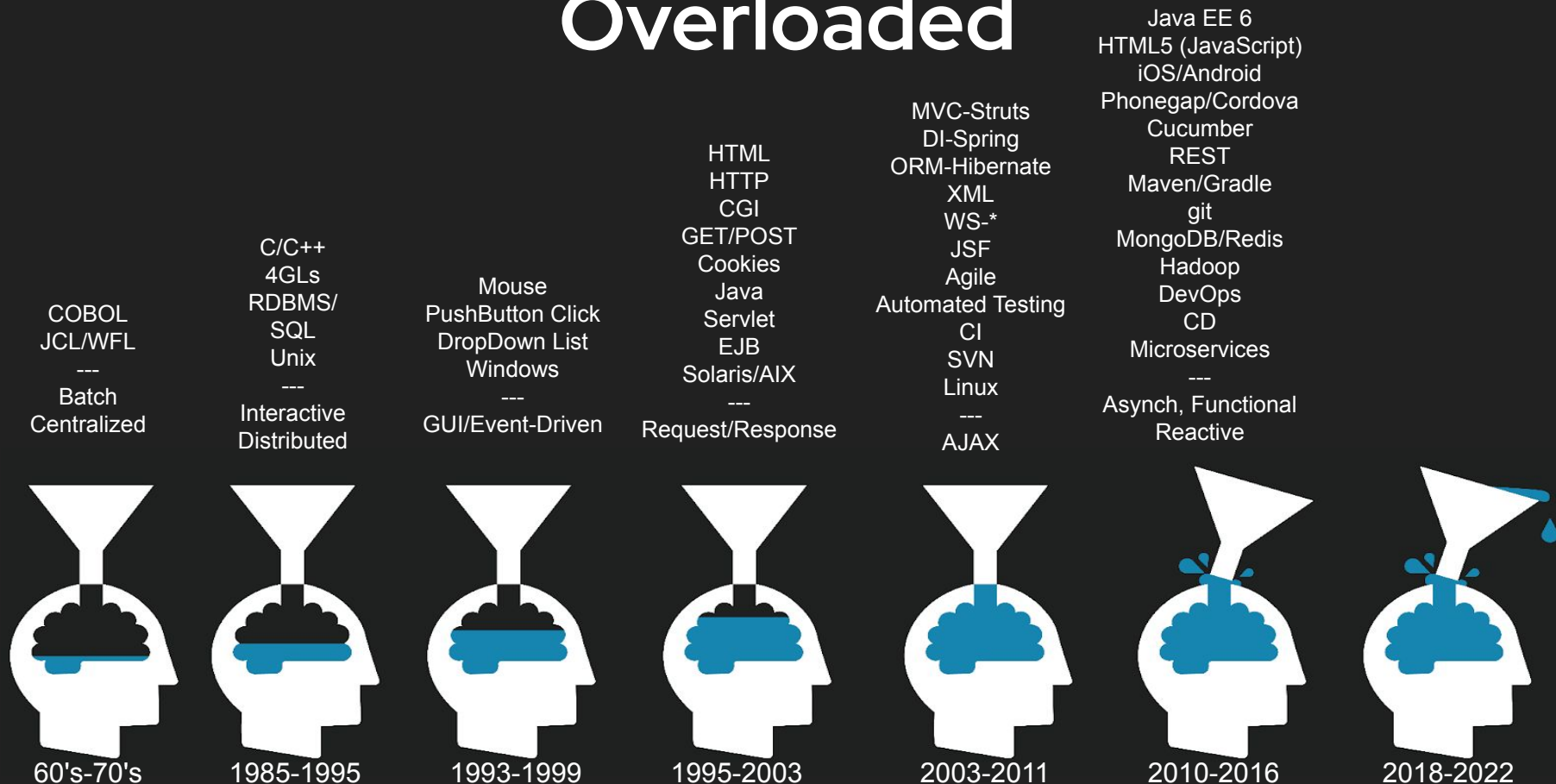




# Overloaded

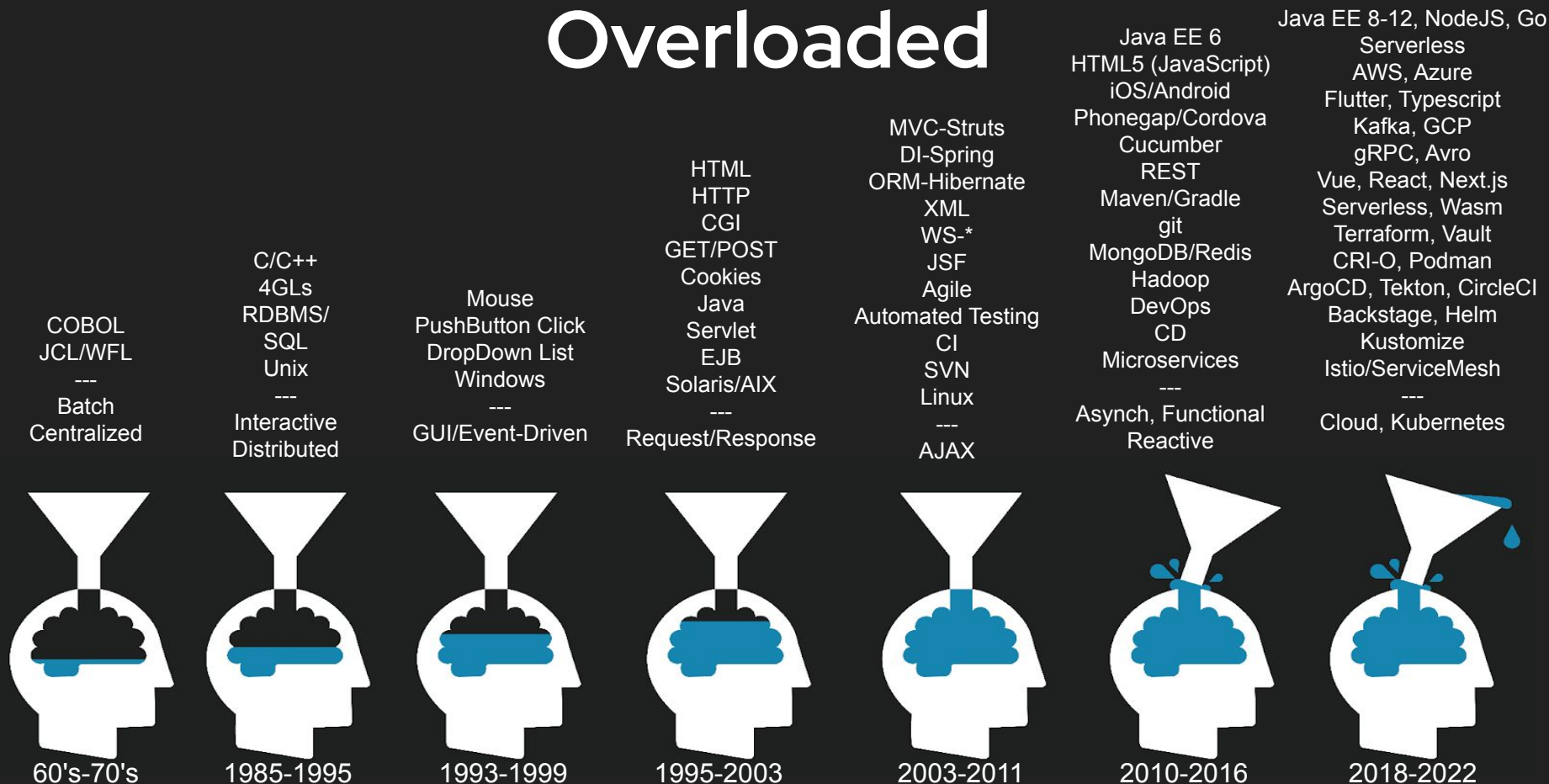


# Overloaded

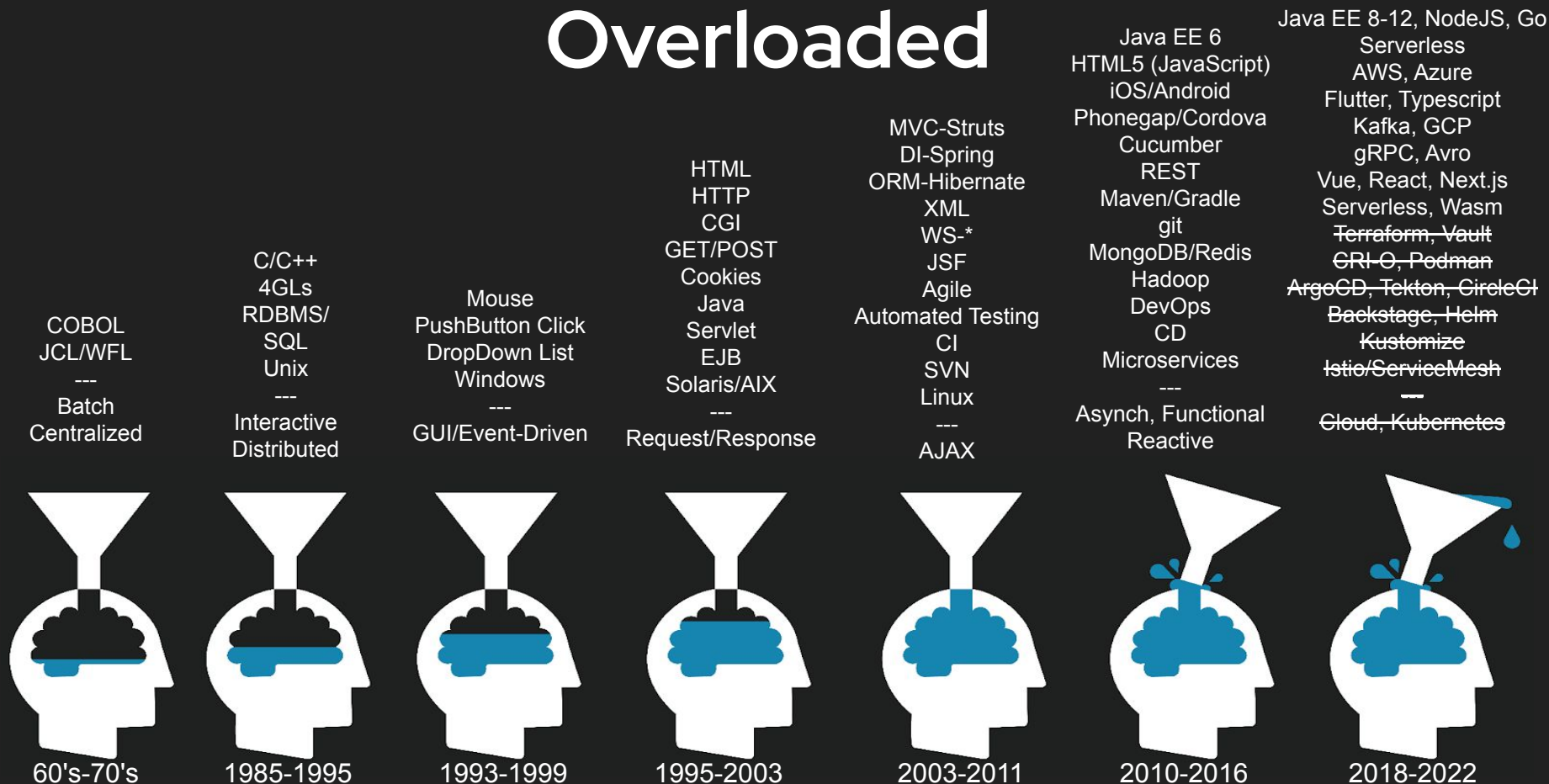




# Overloaded



# Overloaded





# Why so damn complicated?

"If you are a developer, it feels like each year, perhaps each month, maybe even each day brings more challenges, more stress. Gone are the days when we could simply pound out a little code, get our curly braces aligned and fight over tabs vs spaces. Why has it gotten harder? Perhaps "you build it, you own it", sure. But that is not the full story. Just 30 years ago (I know dinosaurs walked the earth), the average developer, built applications for 1 to 5 users, all of which were employees of our same company, often in our same building, we primarily just had to capture end-user data, jam it in a database and report it back out - mostly add/subtract accounting style algorithms and good old CRUD (you know, create, read, update and delete) . Now, we are building applications for potentially a million average consumers with their smartphone, where we might need to perform real-time video stream analysis on their TikTok dance moves. The scale, security concerns and risk to reputation have exploded in just the last few years alone. So, yeah, it feels harder, because it is. We are getting up to about 30 million developers who can create apps for 8 billion people.

So, if you are focused on Platform Engineering, this is the pressure, offering a continuously improving, scalable, secure, reliable, resilient and reusable platform that can support the apps and their teams for that new environment. "

Burr Sutter - captured from email conversations inside of Red Hat, September 2022

"A **digital platform** is a foundation of self-service APIs, tools, services, knowledge and support which are arranged as a **compelling** internal product. "

Evan Bottcher - 2018



Portal (Backstage)

Golden Path Templates

DevX: Collaboration, Tutorials, Videos, Slack

Developer Environments

DBaaS, Kafka-as-a-Service, Cache-as-a-Service, SSO-as-a-Service, etc

CLI (kubectl, helm, git, oc), API

Observability (Ops/SRE view, Dev view, AppOps view, PE view)

Continuous Delivery

Artifact Storage

Security: Runtime scanning, build-time scanners

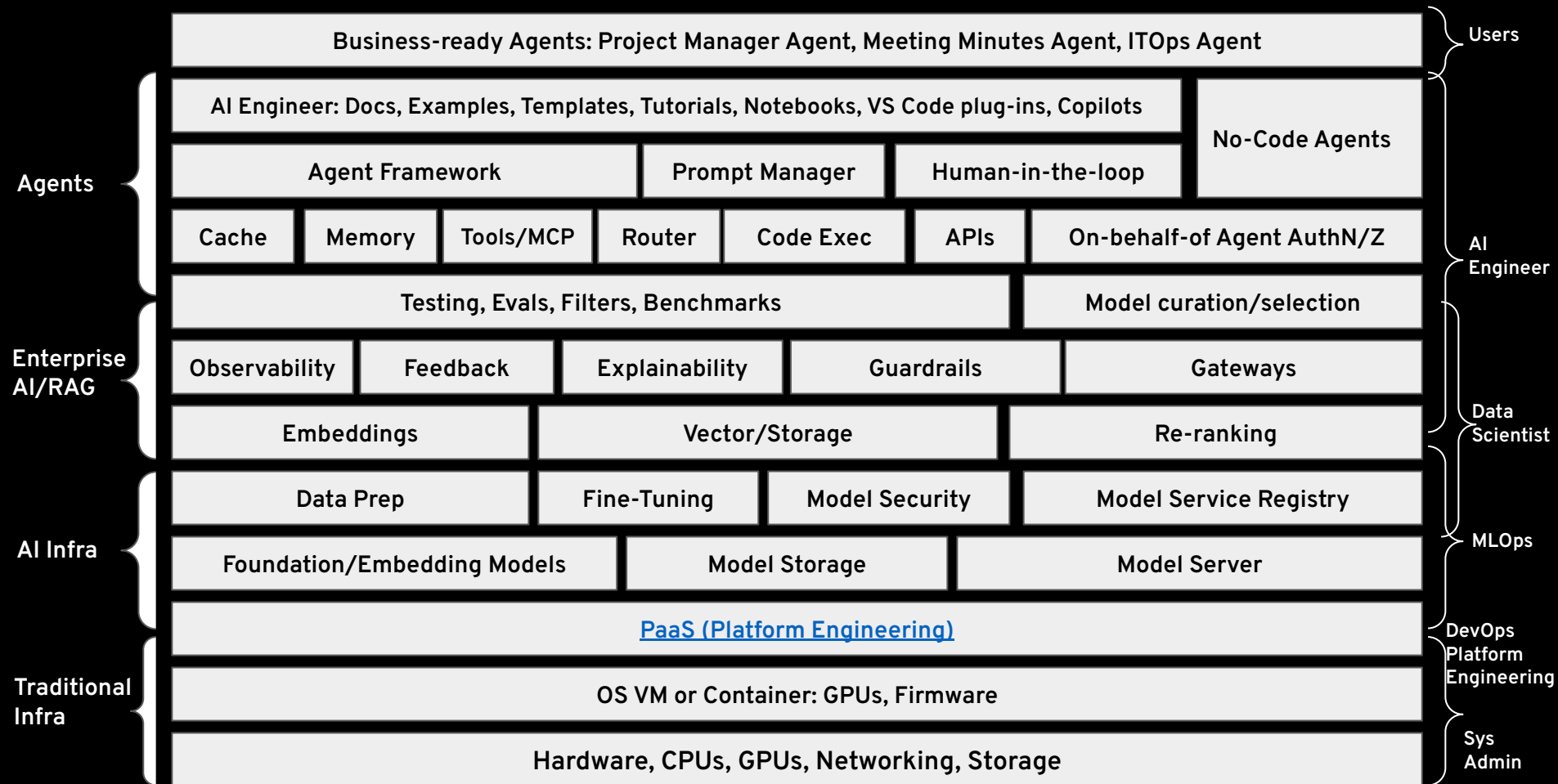
Continuous Integration Engine & Task Runners

Artifact Builder, Image Builder

Source Control

AuthN/AuthZ/RBAC

Compute/Network/Storage, Namespace-as-a-Service/Cluster-as-a-Service, Configuration Management



Portal (Backstage)

Golden Path Templates

DevX: Collaboration, Tutorials, Videos, Slack

Developer Environments

DBaaS, Kafka-as-a-Service, Cache-as-a-Service, SSO-as-a-Service  
**GPU-as-a-Service, Model-as-a-Service, RAG-as-a-Service, docling-as-a-service, evals, MCP, Integrations** etc

CLI (kubect!, helm, git, oc), API

Observability (Ops/SRE view, Dev view, AppOps view, PE view, Hallucination detection)

Continuous Delivery

Artifact Storage

Security: Runtime scanning, build-time scanners

Continuous Integration Engine & Task Runners

Artifact Builder, Image Builder

Source Control

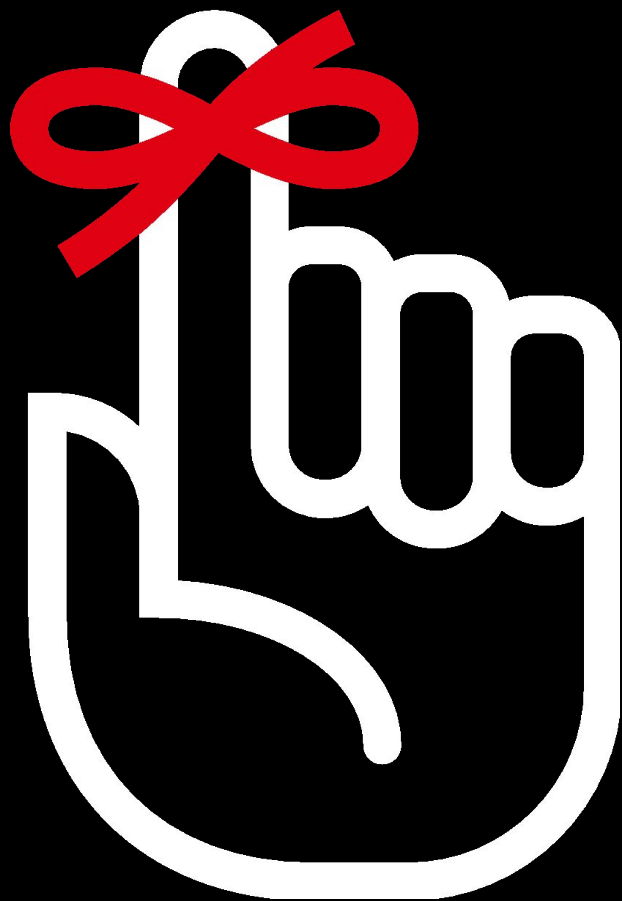
AuthN/AuthZ/RBAC

Compute/Network/Storage, Namespace-as-a-Service/Cluster-as-a-Service, Configuration Management











<https://github.com/docling-project/docling>





## ACME Corp

123 Your Street  
Your City, ST 12345  
(123) 456-7890

## Time Sheet

Name: Jack Jones  
Timeframe: Week of 9/4/2024 - 9/8/2024  
Submitted on: 9/8/2024

	Mon Sep 4	Tue Sep 5	Wed Sep 6	Thu Sep 7	Fri Sep 8	Totals
Check-in Meetings	1.00	2.50	2.00		1.00	6.50
Research		2.50		5.00	2.00	9.50
Graphic Design	6.00	3.00	3.50	0.50	5.00	18.00
Integration Session	1.00		4.00			5.00
Total hrs	8.00	8.00	9.50	5.50	8.00	39.00
Billing rate (hourly)						140.00
						\$5,460.00

2. In consideration of the worked performed by Contractor pursuant to an SOW Agreement, Contractor shall be paid for services performed on a time and materials basis in accordance with the following schedule of rates. For fixed price deliverables, Contractor shall be paid in accordance with the payment schedule included in the applicable SOW Agreement. All rates shall be inclusive of any and all fees and expenses, including mileage.
3. If the State Authorized Representative approves in writing in advance Contractor Personnel working remotely, at a location other than as directed by the State, all Contractor Personnel hours worked remotely must be clearly reported as remote and invoiced at the appropriate remote rate.

IT Service Category	Title of Positions	Hourly Rate	
		On-Site	Remote
A Business Analyst/PM			
	Program Manager	\$225	\$205
	Senior Project Manager	\$220	\$200
	Project Manager	\$195	\$185
	Senior Business Analyst	\$195	\$180
	Business Analyst	\$175	\$160
E. Enterprise GIS Services			
	Program Manager	\$225	\$205
	Senior Project Manager	\$220	\$200
	Project Manager	\$195	\$185
	Senior Technical Consultant	\$210	\$195
	Technical Consultant	\$195	\$185
	Data Architect	\$250	\$235
	Enterprise Architect	\$250	\$235
	Application Architect	\$240	\$220
	Solution Architect	\$240	\$220

21 of 68



## Photography Invoice

## INVOICE

Invoice #: 12074

Invoice date: 7/19/24

Job Details: Photo Shoot

123 Street Name  
Denver, CO 80205  
P: 555-555-5555

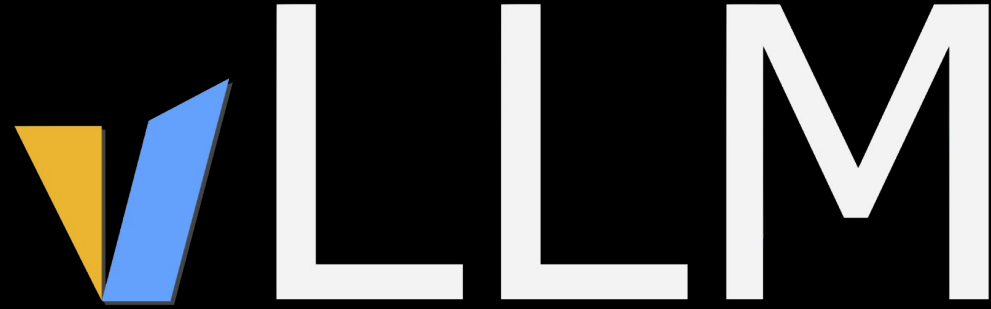
[email@samplebusiness.com](mailto:email@samplebusiness.com)

Bill to: Customer Name  
Address: 123 Street Name  
Denver, CO 80205  
Phone: 555-555-5555

Description	Qty	Unit price	Discount	Price
Wedding Ceremony Photos	1	\$1,500.00		\$1,500.00
Bride & Groom Portraits	1	\$500.00		\$500.00
Engagement Photoshoot	1	\$300.00		\$300.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

Invoice Subtotal \$2,300.00  
Tax Rate 6.00%  
Sales Tax \$138.00  
Deposit Received \$50.00  
**TOTAL \$2,388.00**

Please make all checks payable to Wedding Photography.  
[email@samplebusiness.com](mailto:email@samplebusiness.com) | [www.samplebusiness123.com](http://www.samplebusiness123.com)



1990s



TECHNOLOGY  
& TECHNOLOGY

# BARNES & NOBLE BOOKS

Bagise of  
Hogopring





1990s TOP TOLS DR DEVELOPER SHOWDOWN

# PowerBuilder

PowerBuilder  
FOR ENTERPRISE  
APPLICATIONS

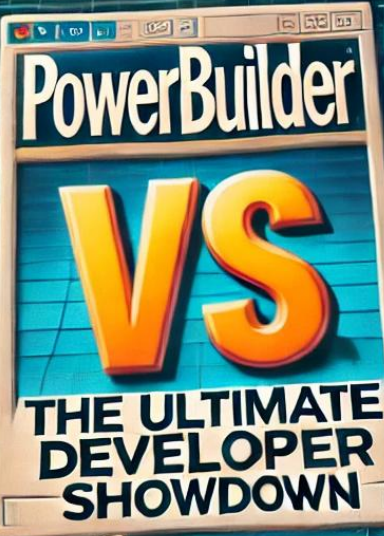


SQL WINDOWS



TOP TOOLS  
FOR ENTERPRISE  
APPLICATIONS

TOP TOOLS  
FOR ENTERPRISE  
APPLICATIONS



TOP TOOLS  
FOR ENTERPRISE

ENTREPRENEUR



SQL  
WINDO

SQL WINDOWS



2000s



Google

 stack overflow

 reddit

 YouTube

2020s



stability.ai

Gemini

















<https://bit.ly/golden-path-ai>

# The End

(Platform Engineering focus)







<https://bit.ly/golden-path-ai>

# A Developer's Adventures in AI Wonderland

recording

Burr Sutter





are you?

# Who is Burr Sutter?

Burr Sutter is a technology evangelist and speaker, known for his work in the **Python** programming language community. He currently serves as the Director of Developer Experience at Anaconda, Inc.

Burr Sutter is an **American businessman, investor, and philanthropist**. He is the founder of Sutter Homes, a real estate development company that has built numerous luxury residential properties in California, including several in the Los Angeles area. In 2018, he became the first African American to be inducted into the Hollywood Walk of Fame.

Burr Sutter is a well-known **American voice actor** and sound designer. He's particularly famous for his work on animated TV shows, films, and video games.

Burr Sutter is a professional software developer, trainer, and presenter. He is known for his expertise in the **.NET** programming framework and for his work in the technology industry. He frequently speaks at conferences and events, and has written articles and tutorials on a variety of technical topics.

Burr Sutter was a **professional stock car racing driver** who competed in the NASCAR Winston Cup Series. He was born in 1948 and passed away in 2002. Sutter won a total of 10 races in his career, with his first win taking place in 1980.

LLMs hallucinate - make shit up - and  
infrequently respond with the exact same string





# Biggest Blockers

LLM responses are not explainable,  
predictable and repeatable

Hallucinations

# Tips:

Turn Down Your Temperature

Structure Your Output

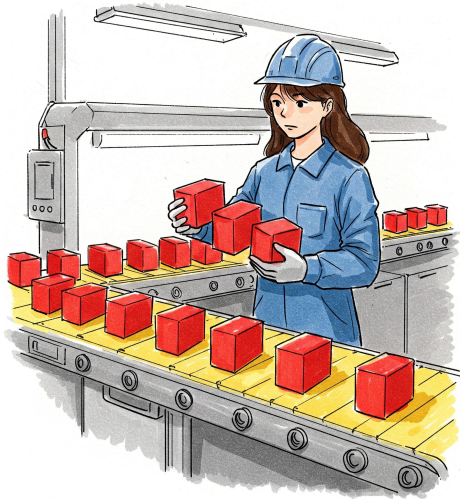
Tools & Context

RAG

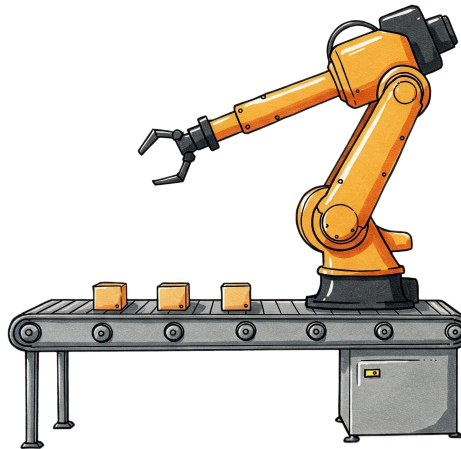
Agentic

**What is it good for?**





**Manual  
(Human  
Powered)**

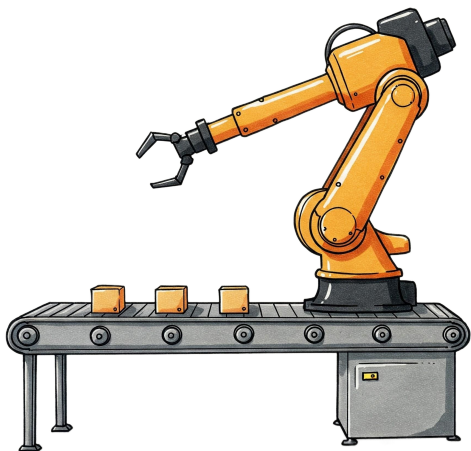


**Traditional  
Software &  
Automation**

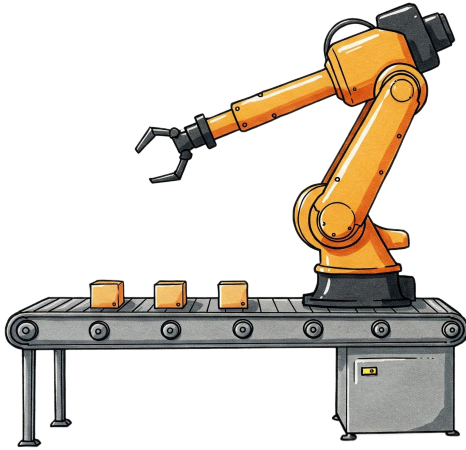


**Stochastic  
Robot  
Parrot**





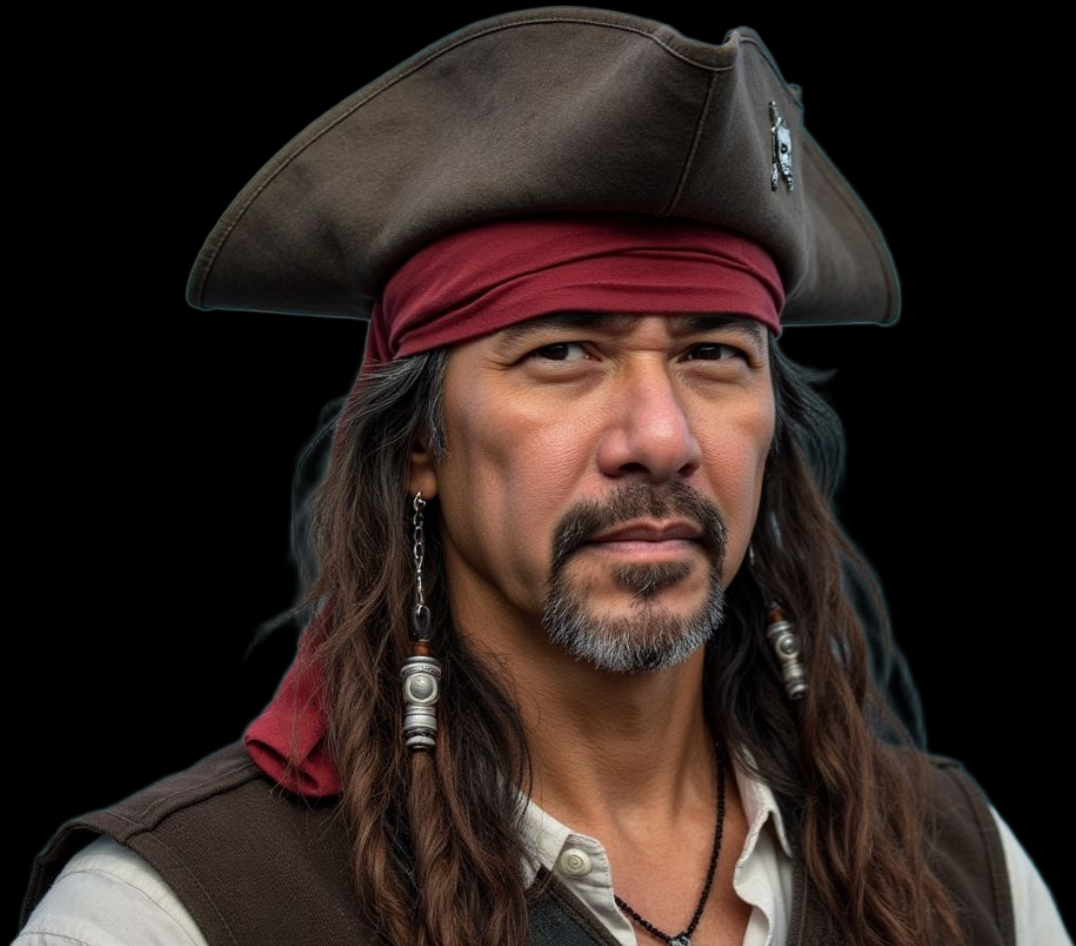


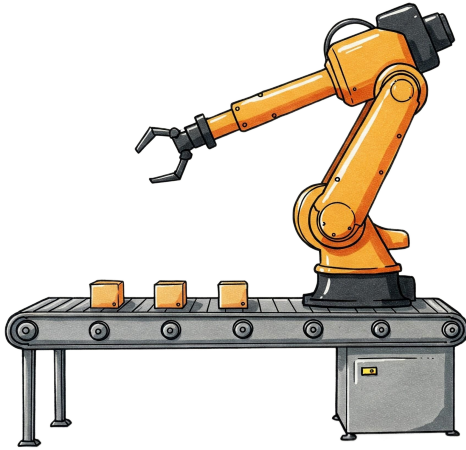


- ✓ Debit/credit the GL
- ✓ Deposit check
- ✓ Update inventory
- ✓ Update payroll
- ✓ Ship goods
- ✓ Process credit card



- ✓ Tell me a bedtime story
- ✓ Speak like a pirate
- ✓ Tell me a Dad Joke
- ✓ Snake game in Python
- ✓ Vacation planning
- ✓ Make me Tarzan





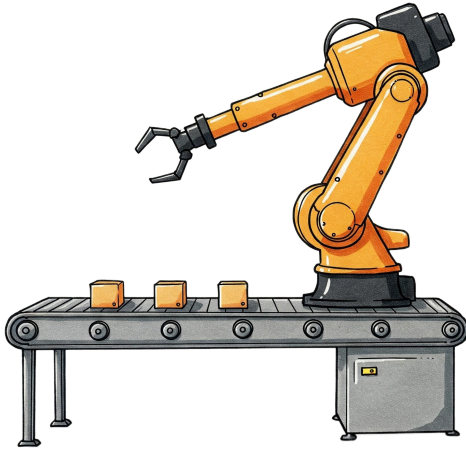
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- ✓ Tell me a bedtime story
- ✓ Speak like a pirate
- ✓ Tell me a Dad Joke
- ✓ Snake game in Python
- ✓ Vacation planning
- ✓ Make me Tarzan!



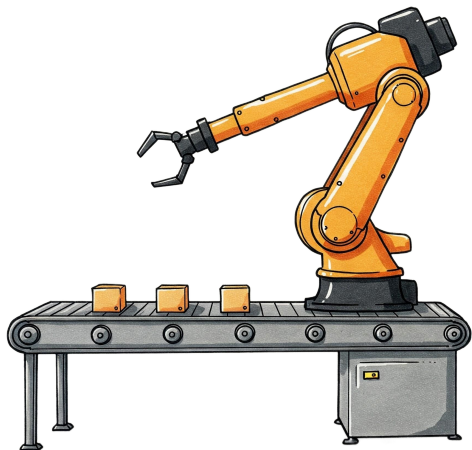




- ✓ Known Inputs
- ✓ Verifiable Outputs
- ✓ Predictable
- ✓ Repeatable
- ✓ Uninventive
- ✓ Regulated



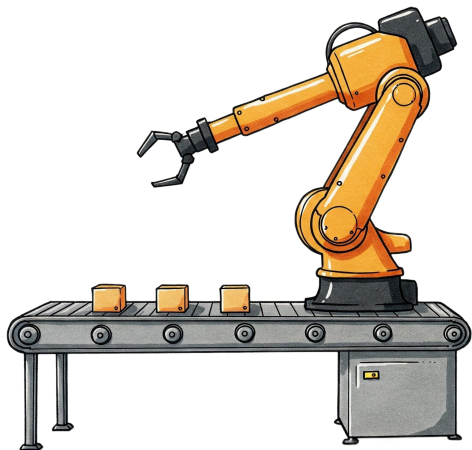
- ✓ Unknown Inputs
- ✓ Singular Outputs
- ✓ Unpredictable
- ✓ Not repeatable
- ✓ Inventive



- ✓ Repeatable with error reconciliation loop
- ✓ Semi-predictable but with some oversight
- ✓ Natural Language Input
- ✓ Often previously un-automated
- ✓ Often ignored due to high human cost
- ✓ Known workflow but with manual, time-consuming, boring, human-powered steps/tasks

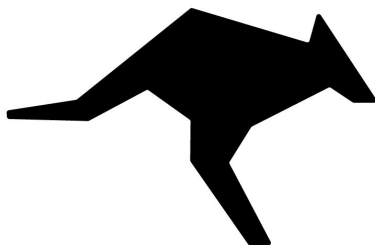






- ✓ RAG - Chat with Private Docs
- ✓ OmniQuery - Universal Natural Language Insights Across All Your Enterprise Data
- ✓ IntelliParse - Automatic Document Ingestion
- ✓ Virtual Assistant
- ✓ Developer Assistant/co-pilot (pair-programmer)





# LLMs - different sizes and capabilities





# LLMs - different super powers





Too many tools problem

Different LLMs have different  
juggling capabilities



# Your Journey to LLM Awesomeness



**Prompt**



**Structured  
Output**



**Tools  
MCP**



**RAG**



**Patterns**

(chaining,  
LLM-as-a-judge,  
maker-checker,  
agent-coder,  
ReAct)



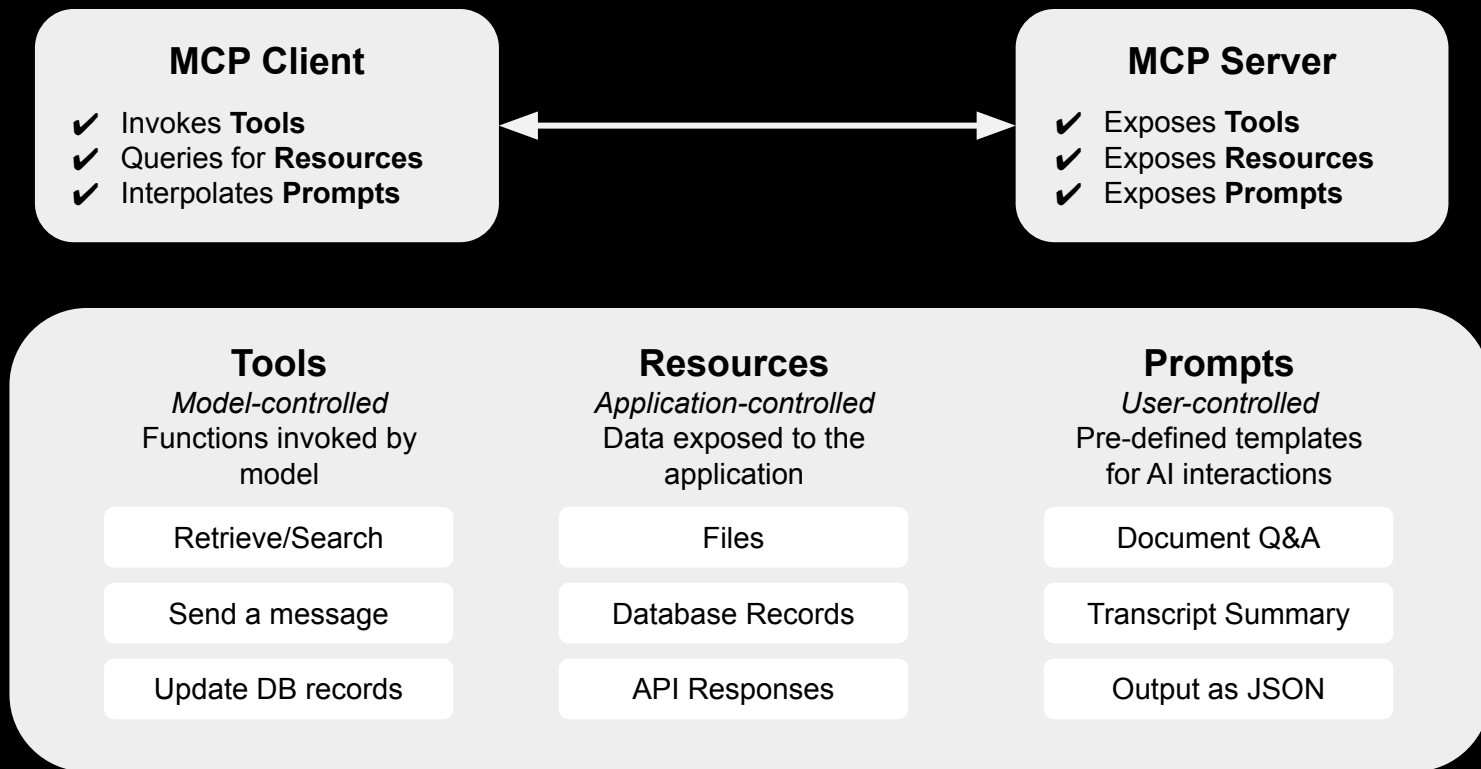
**Agents**

(planning,  
orchestration,  
retries, error-  
correction)



# Tools

# Model Context Protocol (MCP)







Cheetah Habitat and Hunting Patter...

any interesting trends? please graph

Let me analyze our cheetah tracking data for some interesting trends and create a dashboard to visualize them!

R read\_query

R read\_query

R read\_query

R read\_query

R read\_query

WildTrack Cheetah Conservation Dashboard

Interactive artifact

Interesting Trends in Cheetah Tracking Data

Based on our analysis, I've identified several fascinating patterns in the cheetah tracking data:

1. Gender-based hunting success: Male cheetahs in our study show a slightly higher hunting success rate (57.14%) compared to females (50%)

ough the sample size is relatively small.

Reply to Claude...

+

Sonnet 4

↑

WildTrack Cheetah Conservation Dashboard

Hunting Success by Gender

Males show slightly higher hunting success rates (57.14%) compared to females (50%)

Gender	Hunting Success Rate
Female	50%
Male	57.14%

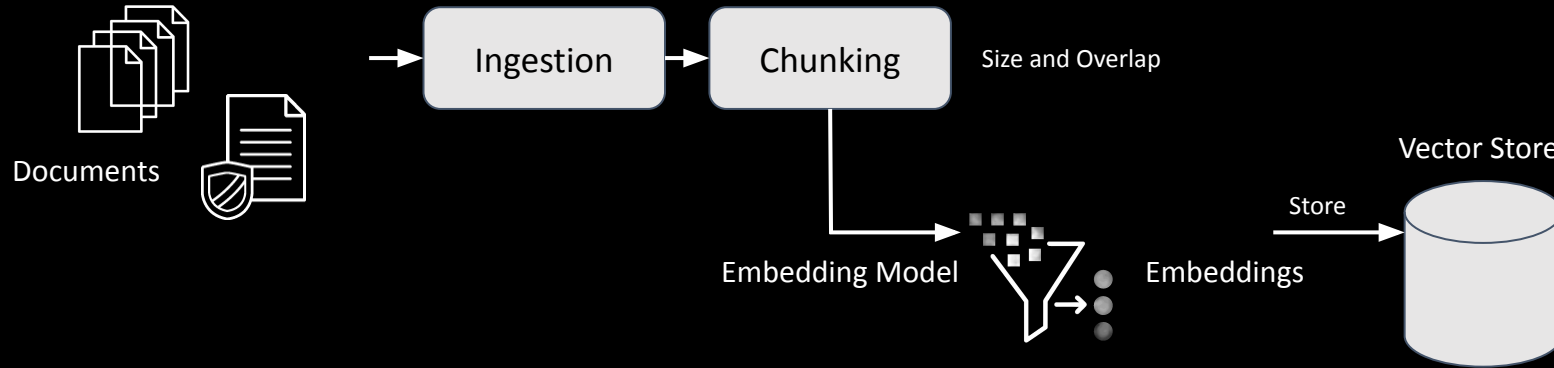
Hunting Success by Habitat

Grasslands show highest success rates (75%), while no successful hunts in Scrubland

Habitat	Hunting Success Rate
Grasslands	75%
Savanna	50%
Scrubland	0%

RAG

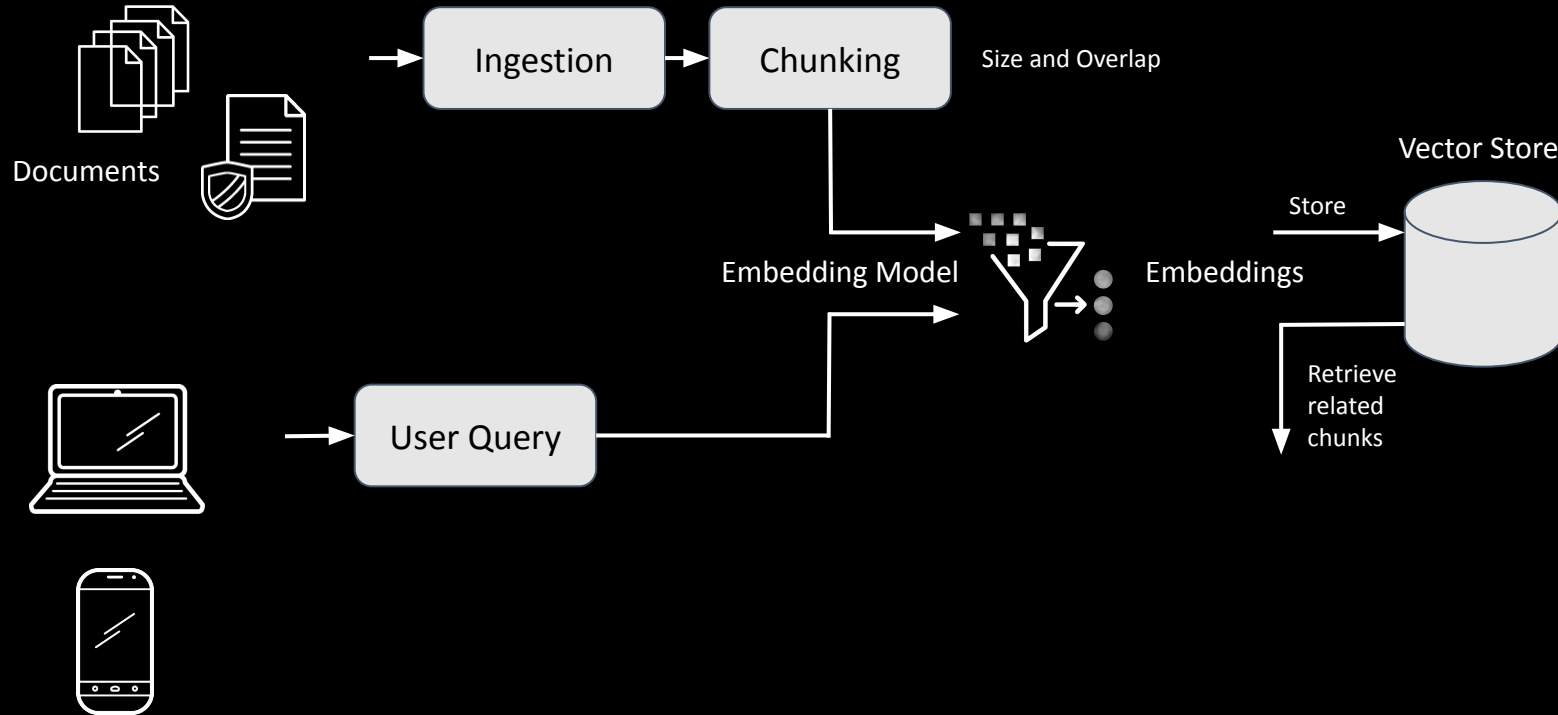
# Naive RAG



Tables, graphs or hand-writing- look at tools like Docling or VLM

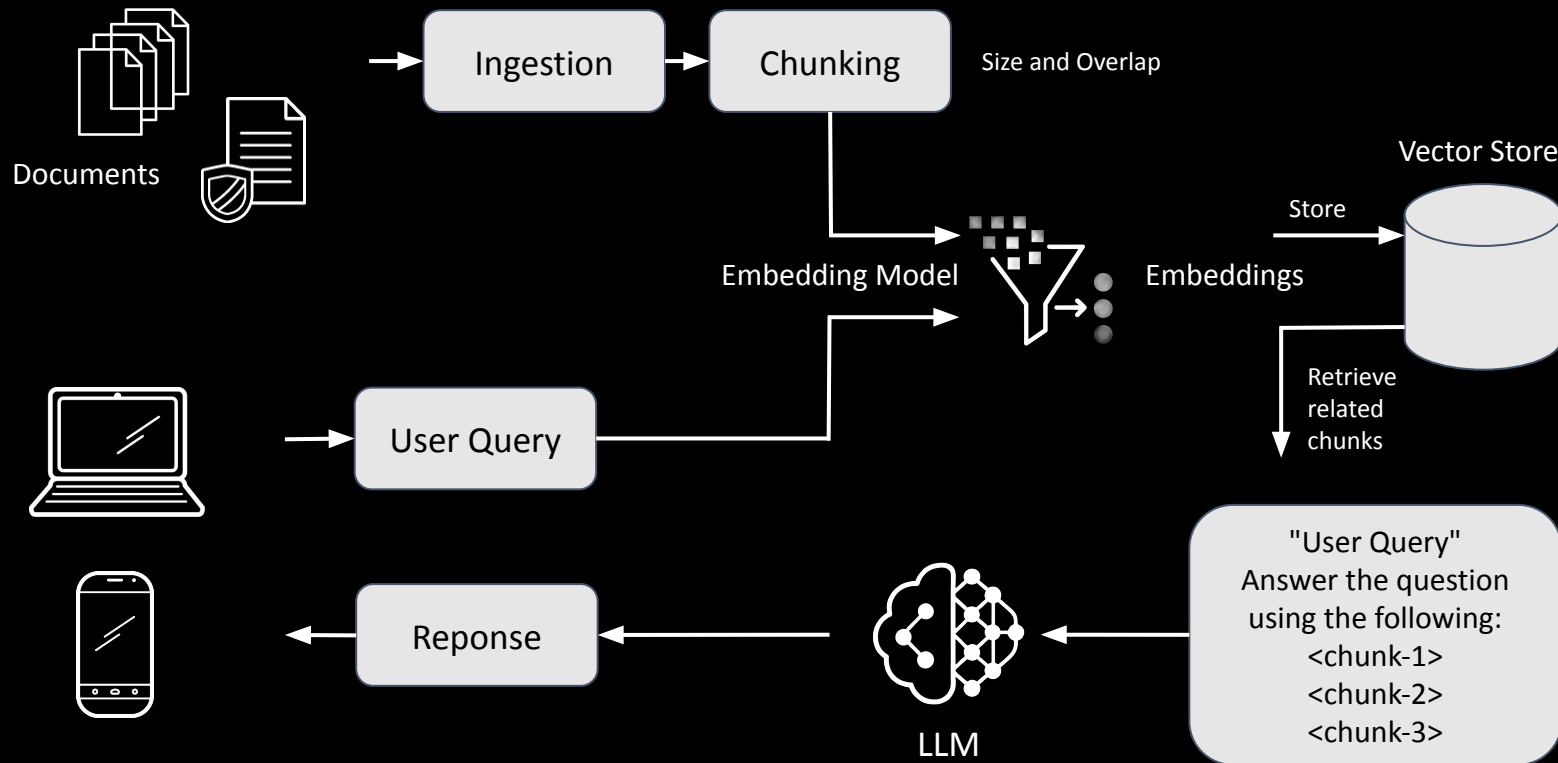


# Naive RAG



Tables, graphs or hand-writing- look at tools like Docling or VLM

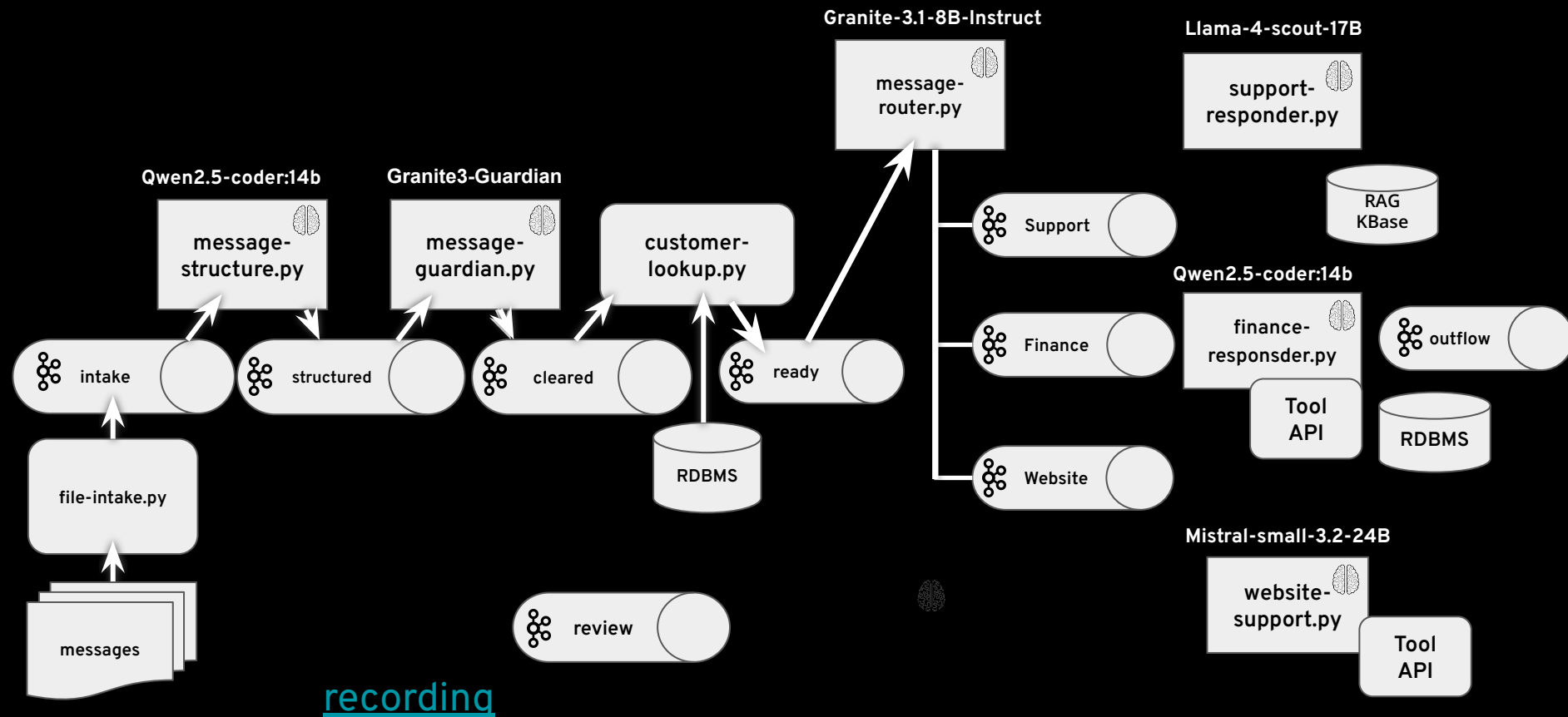
# Naive RAG

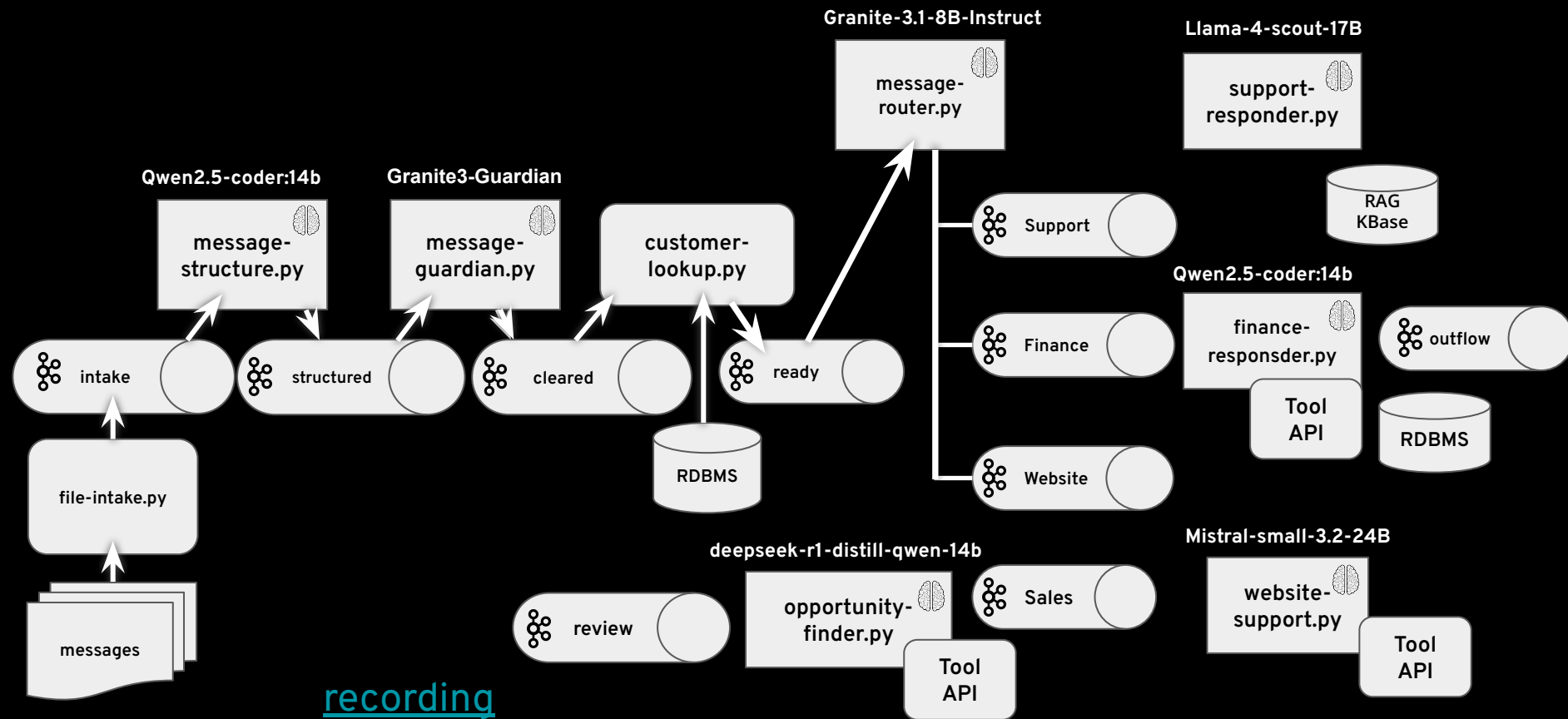


Tables, graphs or hand-writing- look at tools like Docling or VLM

# Agentic System









## Union Physician Services

### Patient Intake Form

Last Name: McCauley First Name: Kate MI: D Date of Birth: 5/9/70

Age: 54 Male or Female: F Social Security #: 869-31-0721

Home Address: 123 Great Expectations Lane, Raleigh, NC 27619

Street City State Zip

Home Phone: 919-872-5555 Cell Phone: same Work Phone: N/A

Email Address: katehthegreat@gmail.com

Employer: N/A Primary Language Spoken: Eng.

Ethnicity: ☒ Non-Hispanic ☐ Hispanic ☐ Other

Race: ☐ African American ☐ Asian ☒ Caucasian ☐ Hispanic ☐ Native American ☐ Other

Referring Doctor: N/A

Marital Status: ☒ Married ☐ Single ☐ Widowed ☐ Divorced

Spouse Name: C. Grant Date of Birth: 19/91/68

Insurance Co: United Policy #: 2376-041 Group #: D34F

Subscribers Name: Patty Grant SS#: 072-44-63 DOB: 12/31/68

Address if Different than Patient: Phone: 919-639-0737 Relationship to Patient: Spouse

Street City State Zip

Insurance Co: N/A Policy #: \_\_\_\_\_ Group #: \_\_\_\_\_

Subscribers Name: \_\_\_\_\_ SS#: \_\_\_\_\_ DOB: \_\_\_\_\_

Address if Different than Patient: Phone: \_\_\_\_\_ Relationship to Patient: \_\_\_\_\_

Street City State Zip

Emergency Contact (EC) / Release of Information (ROI)- Please Check the Boxes that Apply:

Name of Person to Contact in case of Emergency/ or we may release information to:

Name: Virginia Hall Phone: 919-241-677 Relationship: mother ☒ EC ☐ ROI

Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Relationship: \_\_\_\_\_ ☐ EC ☐ ROI

Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Relationship: \_\_\_\_\_ ☐ EC ☐ ROI

Communication: ☐ Message may be left ☐ Answering Machine ☐ Family Member

Living Will? ☒ Durable Power of Attorney? ☒ (if yes) Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Relationship: \_\_\_\_\_

Date: 3/28/25

Print: Kate McCauley Signature: K. McCauley

## Vision Models

<https://ollama.com/library/llama3.2-vision:11b-instruct-fp16>

<https://ollama.com/library/granite3.2-vision>







<https://bit.ly/golden-path-ai>

# The End

(Developer & User focus)



# Backups

**Main Title:**

Font: Garamond bold 72 pt lowercase

Color: gold hex #fec802 with black stroke (same for all)

**Subtitle:**

Font: Garamond bold 24 pt small caps

**Name & Date:**

Font: Open Sans Semibold 16 pt

**Slides 3-5** are flattened images (with and without the various image pieces from title slide)

**Slide 6** is Helvetia with a transparent background and (separate image) the Dev logo with transparent background

**Slide 7** is dark background internal slide with title slide background ghosted

**Slide 8** is light background internal slide with background ghosted

**Slides 9-12** are self explanatory ... just in case you wanted any of that imagery :- ) YOU ARE AMAZING!!!

*I think these should be all the imagery pieces you need ... but please tell me if I need to adjust/get you anything additional—hope this helps. I love you!*





