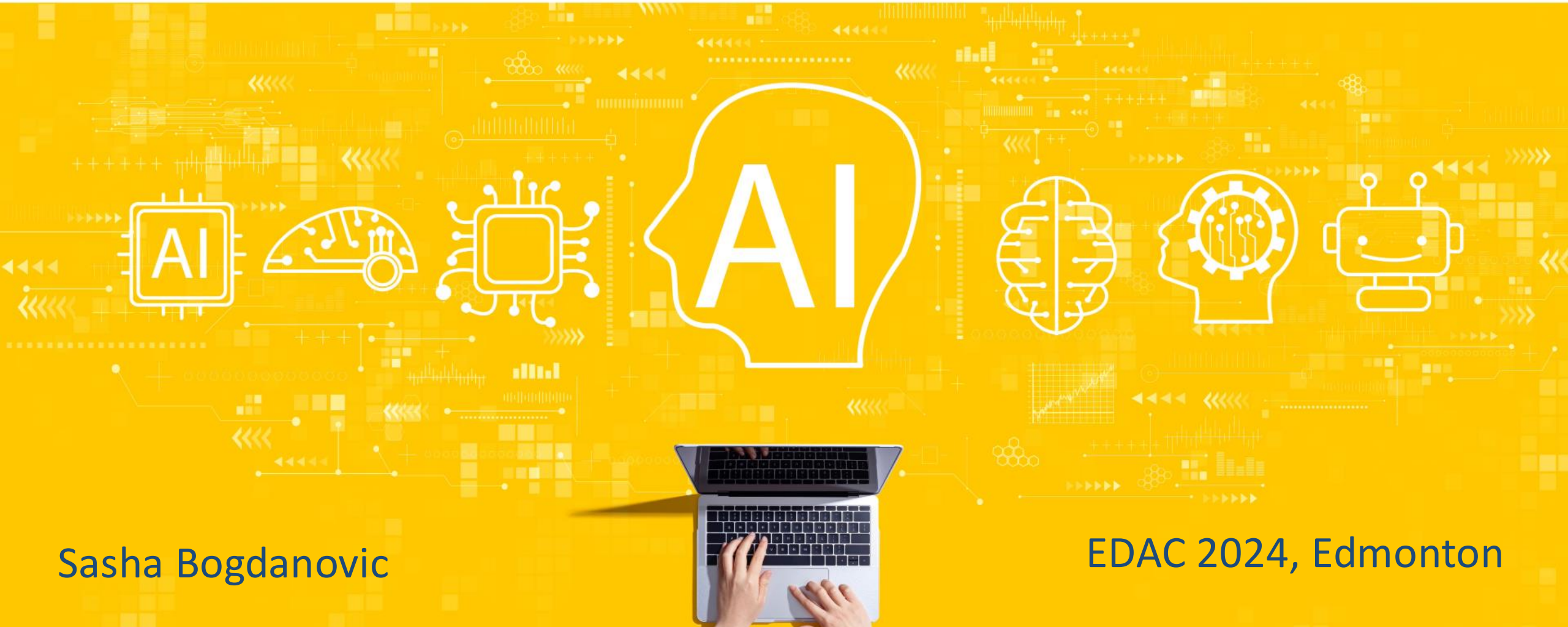


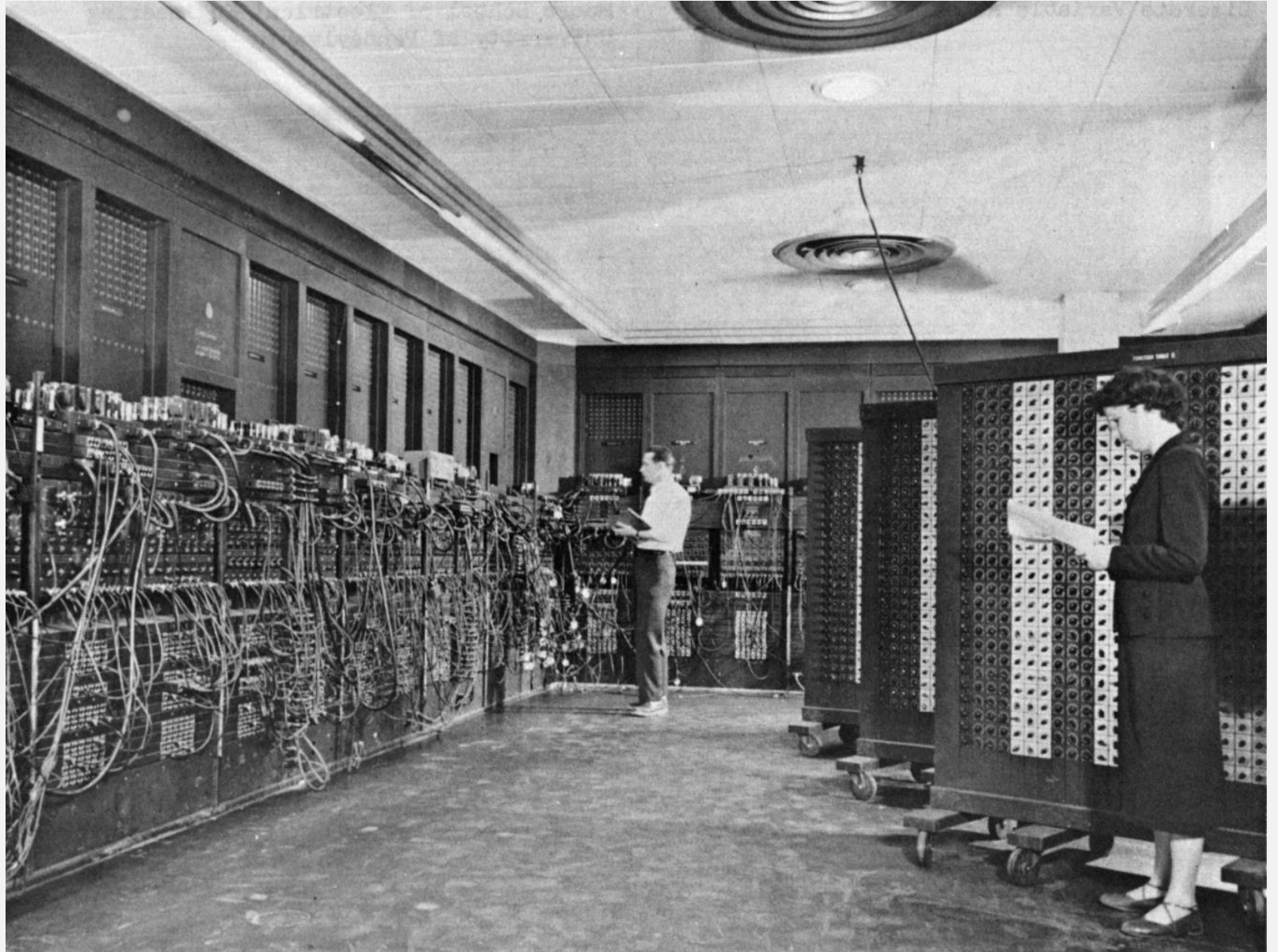
# AI in Economic Development



Sasha Bogdanovic

EDAC 2024, Edmonton

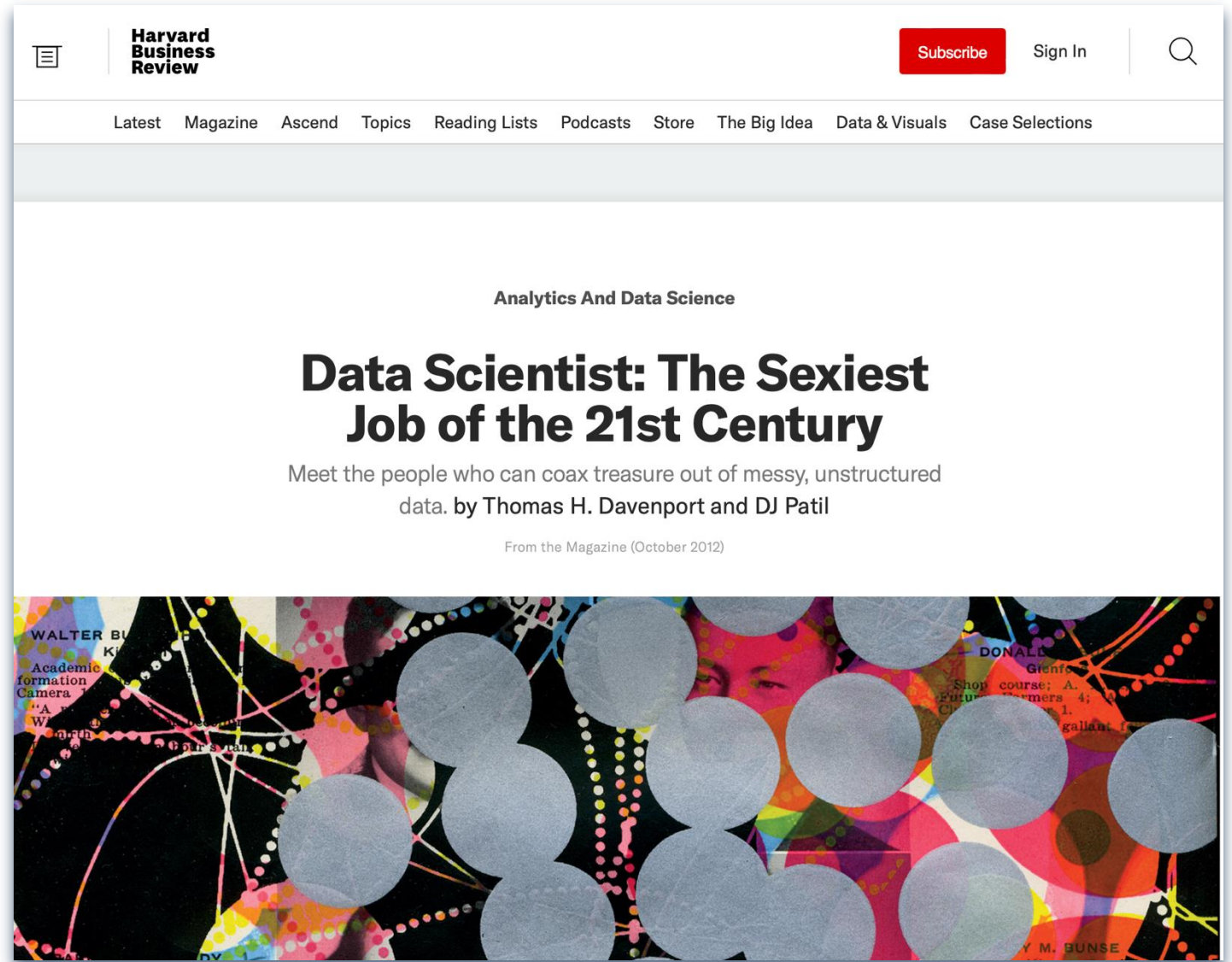
Machines  
performing tasks  
typically requiring  
human intelligence



# AI Enablers

Technology that propelled accelerated innovation:

- Cloud Computing
- Big data
- Machine Learning
- Deep Learning



<https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>

## Mass education

First Data Science MOOC  
("Massive open online course")

Enrolled 1.76 million students  
in inaugural class

# Johns Hopkins Data Science Specialization Top Performers

AUTHOR

Ira Gooding

PUBLISHED

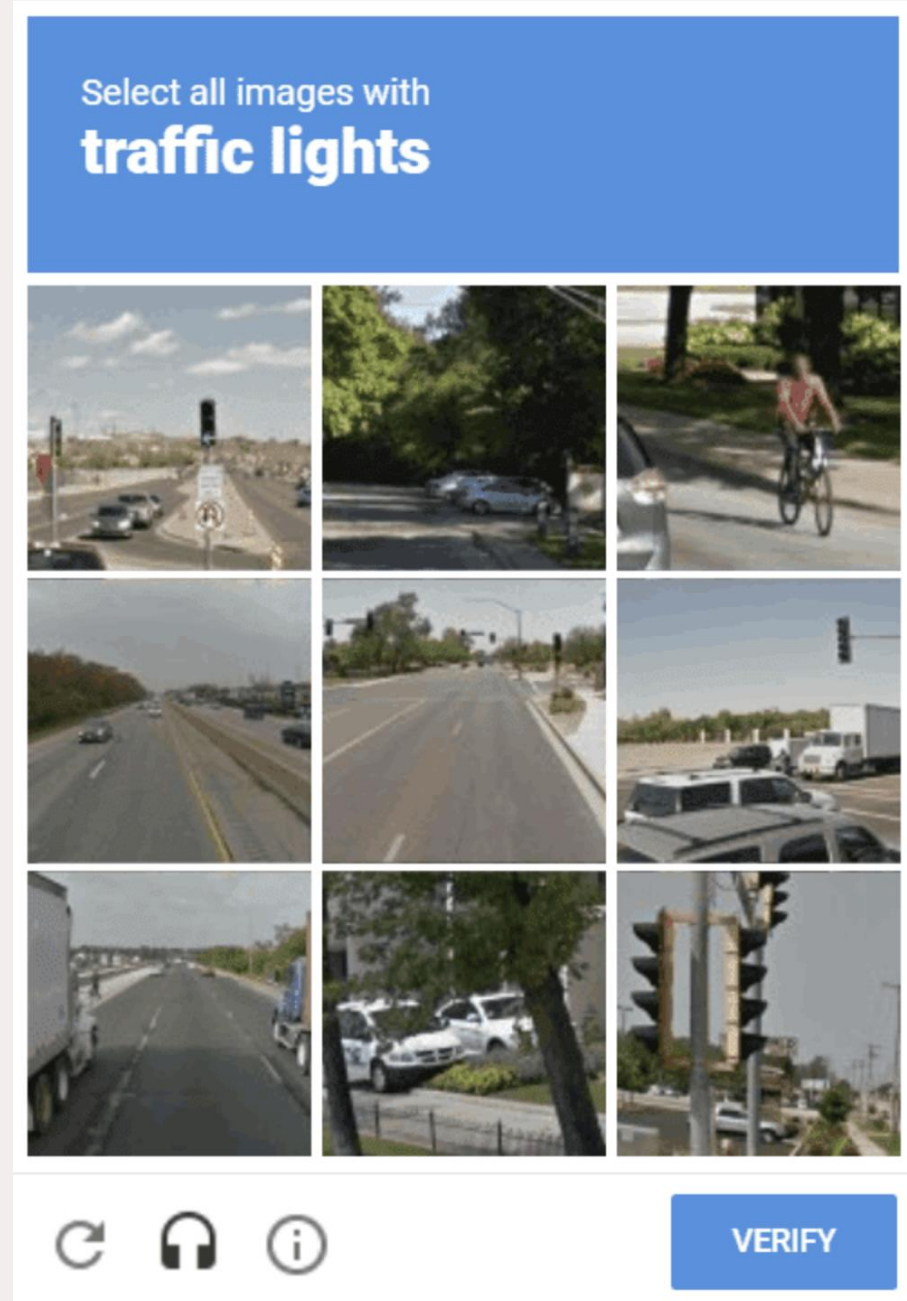
Feb. 4, 2015

*Editor's note: The Johns Hopkins Data Science Specialization is the largest data science program in the world. Brian, Roger, and myself conceived the program at the beginning of January 2014, then built, recorded, and launched the classes starting in April 2014 with the help of Ira. Since April 2014 we have enrolled 1.76 million student and awarded 71,589 Signature Track verified certificates. The first capstone class ran in October - just 7 months after the first classes launched and 11 months after all classes were running. Despite this incredibly short time frame 917 students finished all 9 classes and enrolled in the Capstone Course. 478 successfully completed the course.*

<https://simplystatistics.org/posts/2015-02-05-johns-hopkins-data-science-specialization-top-performers/>

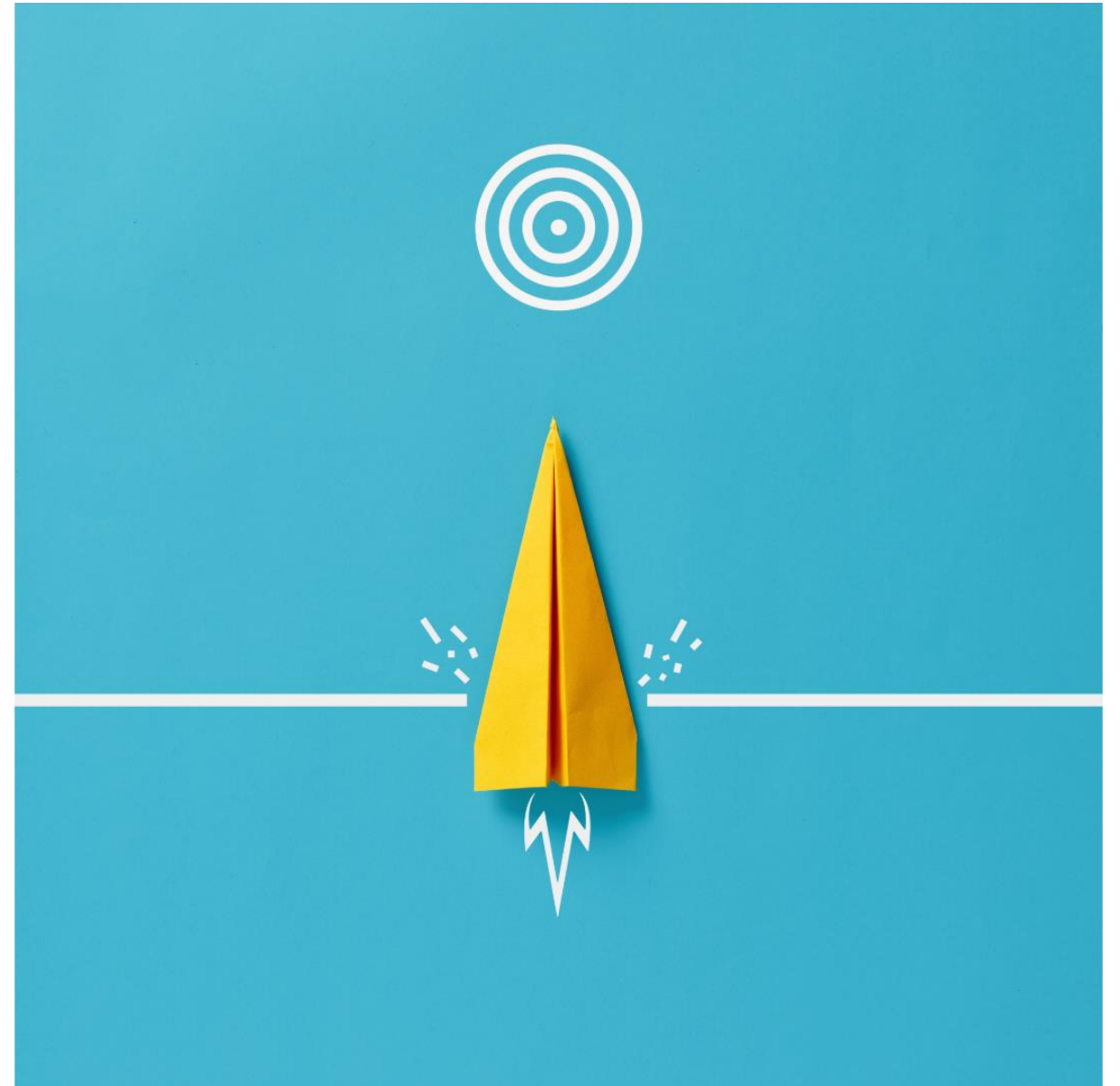
# ML applications

- Image classification (reCAPTCHA)
- Spam filtering
- Recommendation systems (Amazon)
- Computer vision (self-driving cars)
- Voice recognition (Siri, Alexa)
- Healthcare (genome sequencing)
- Fraud detection (finance)
- Marketing campaign optimizations
- Forecasting



# Generative AI applications

- Creative writing (brainstorming)
- Content generation (blogs, SEO, marketing)
- Customer service (chatbots)
- Virtual assistants
- Healthcare (triage)
- Business analytics
- Image and video generation





# What about cats?







Starrin  
Airi Na

4GIFS.com

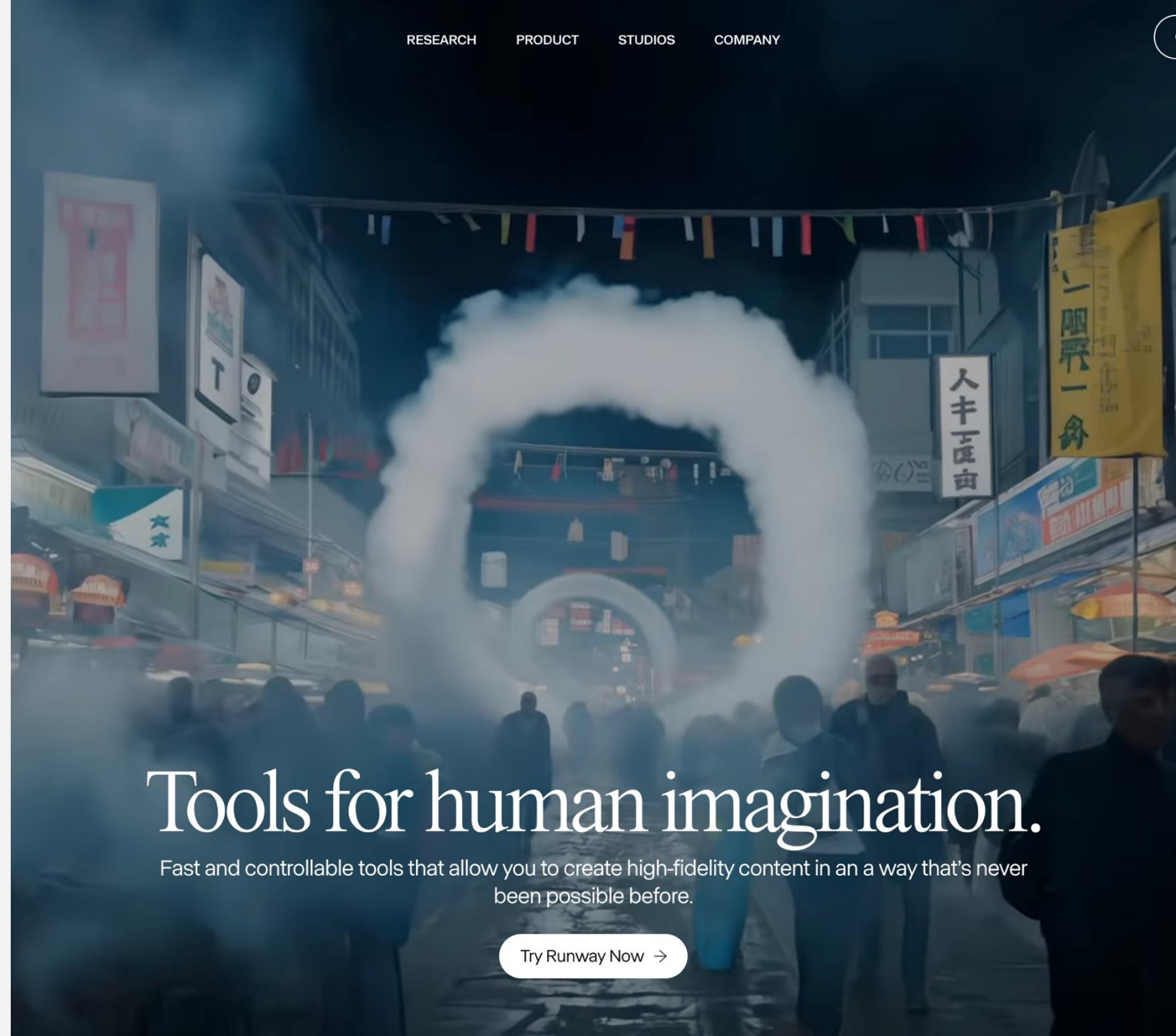


GIFS.com

FURRY

Prompt: “The setting is a quiet street, captured in a medium shot with soft natural lighting. A girl crouches looking at a cat that walks towards her from a distance, approaching deliberately. The girl extends her hand gently, thinking the cat is coming to her. But just as the cat reaches her, it takes a detour, walking around her instead. The girl is frozen in surprise as she watches the cat continue on its way, completely ignoring her, then going away. The camera remains steady, capturing his reaction and the subtle humour of the scene.”

URL: [runwayml.com](https://runwayml.com)



RESEARCH

PRODUCT

STUDIOS

COMPANY

# Tools for human imagination.

Fast and controllable tools that allow you to create high-fidelity content in an a way that's never been possible before.

Try Runway Now →

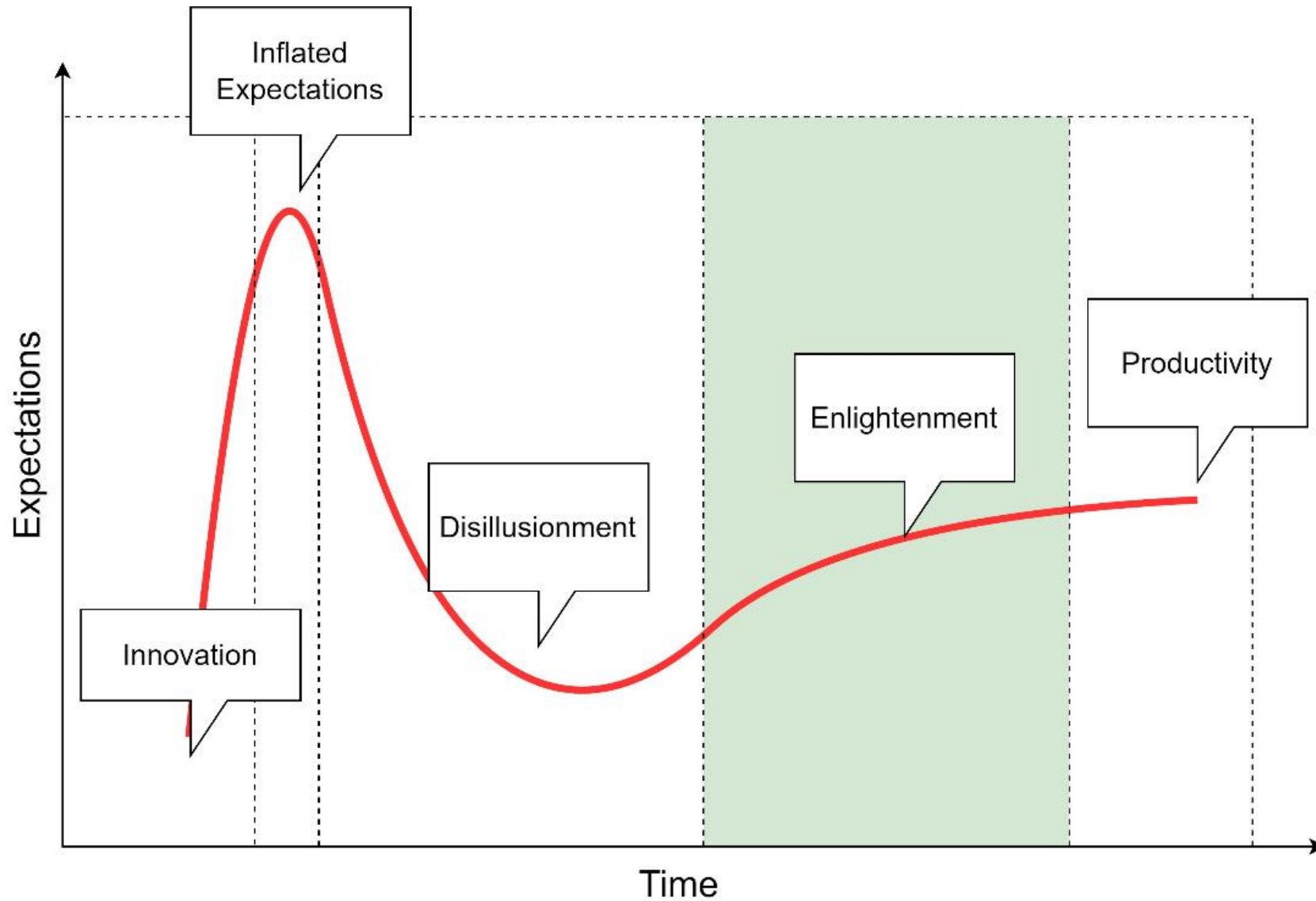
**CityViz**

[www.cityviz.ca](https://www.cityviz.ca)

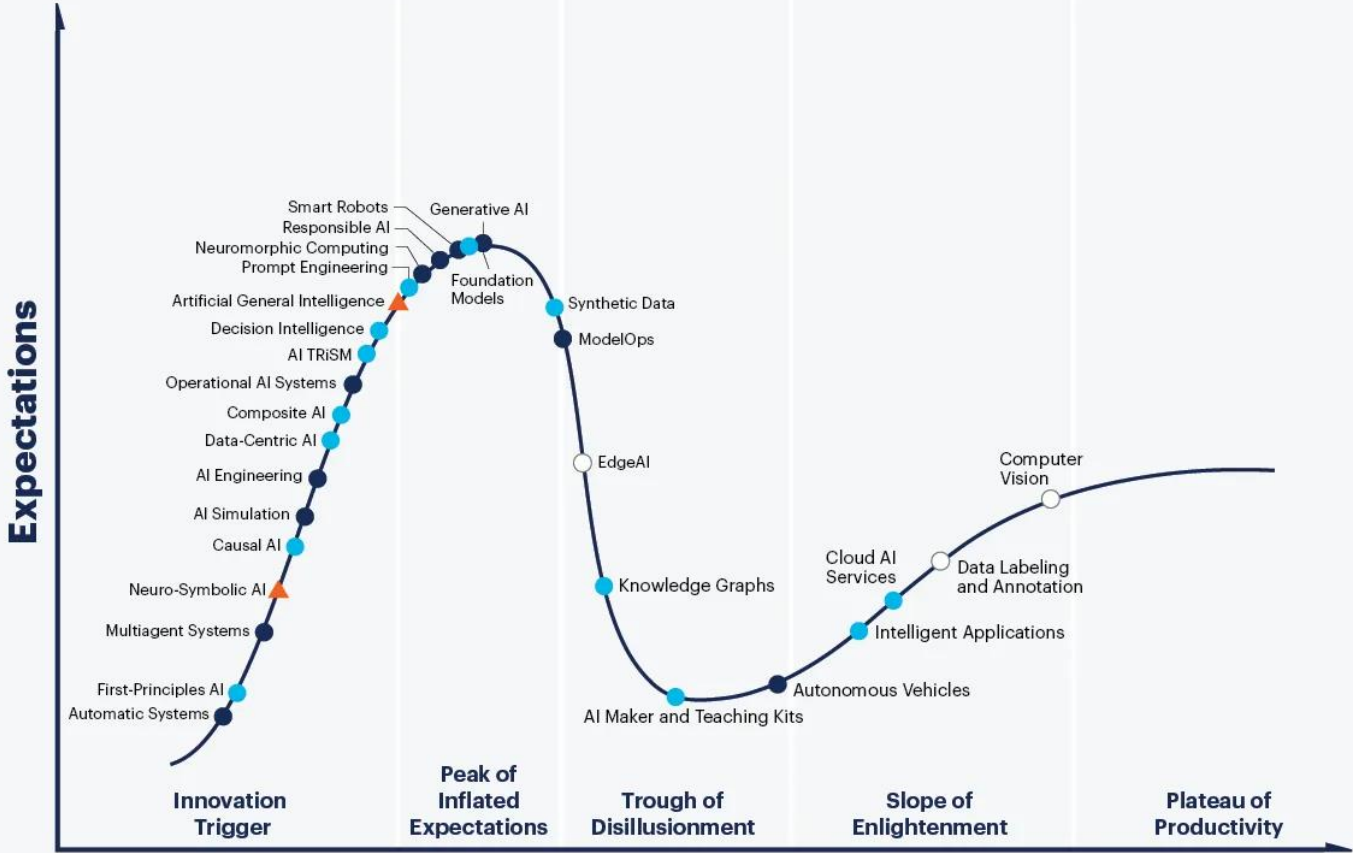
[info@cityviz.ca](mailto:info@cityviz.ca)

(250) 317-5636

# Gartner Hype Cycle



# Hype Cycle for Artificial Intelligence, 2023



Plateau will be reached:  
 ○ less than 2 years   ● 2 to 5 years   ● 5 to 10 years   ▲ more than 10 years   ⊗ obsolete before plateau   As of July 2023

gartner.com

Source: Gartner  
 © 2023 Gartner, Inc. and/or its affiliates. All rights reserved. 2079794



# Risks

- Privacy
- Data being transferred to servers outside of Canada
- Accuracy of AI output
- Ethical concerns
- Controversies

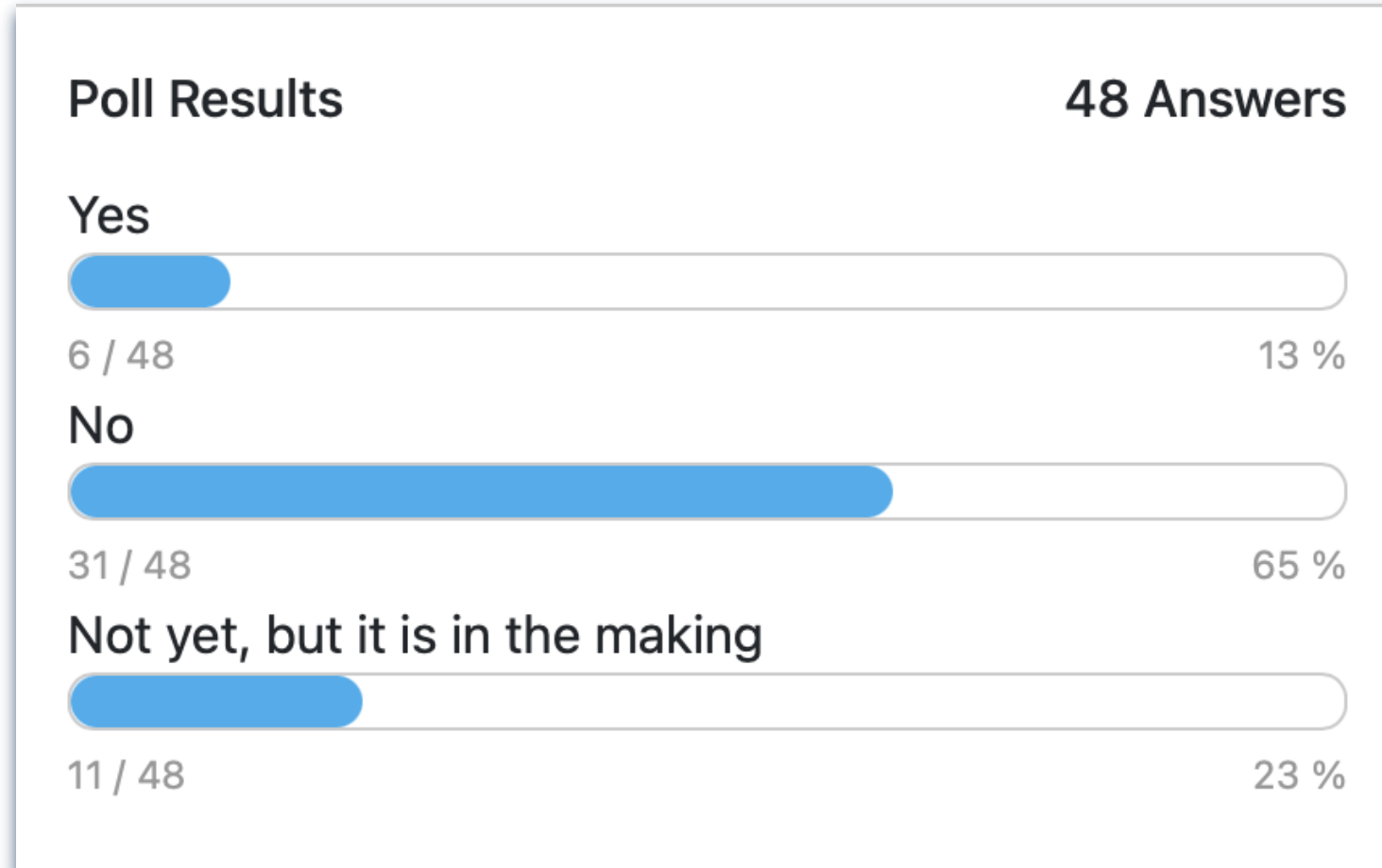


# Unstoppable Progress

Luddites – English textile workers  
destroying machines in 19<sup>th</sup> century



# Does your organization have a policy for using AI at work?



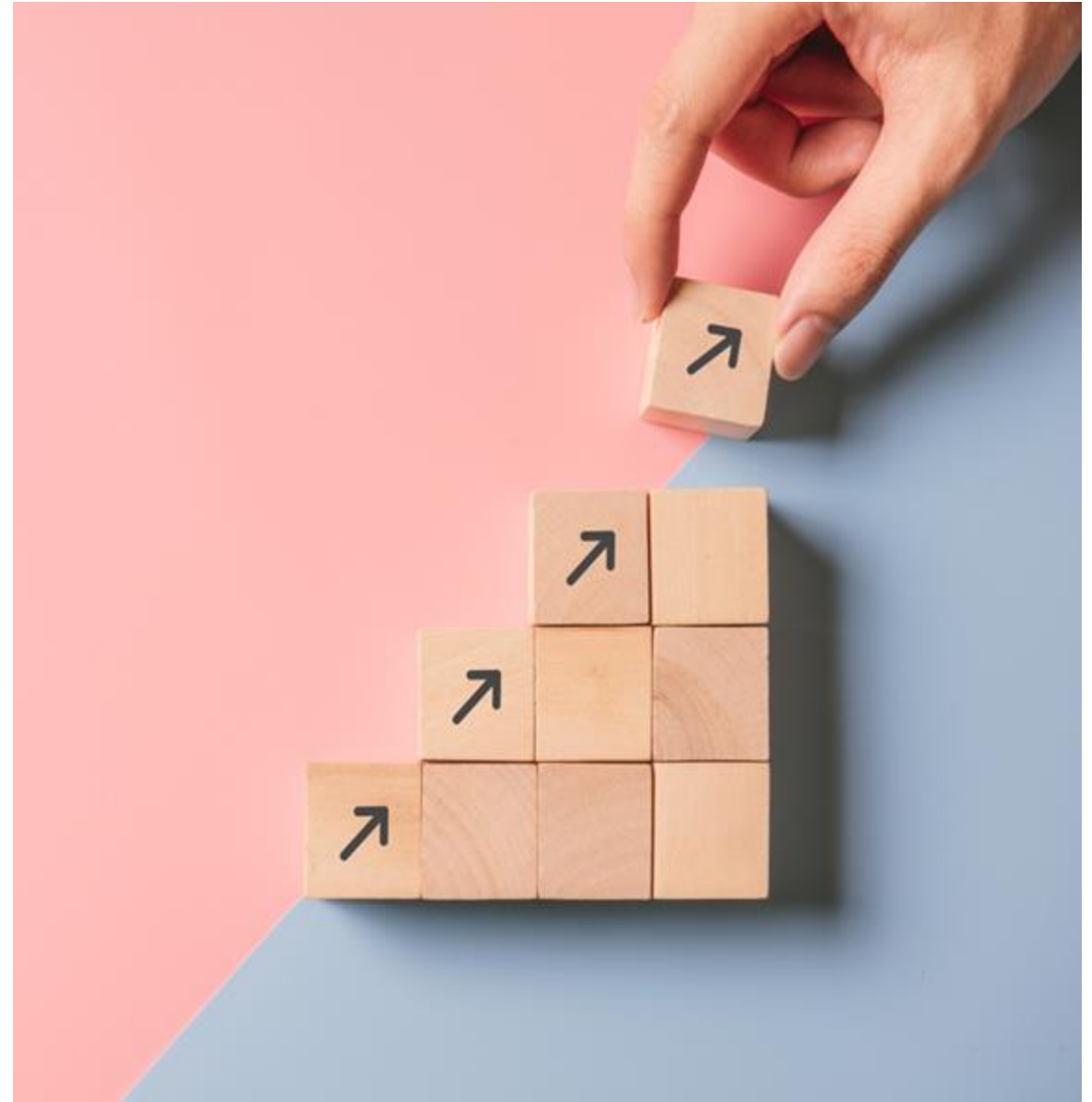


# Solutions

## ChatGPT alternatives (there are many!!)

- Gemini by Google (ex-Bard)
- Llama by Meta (Facebook) – open source
- Claude by Anthropic

## Self-hosted open-source AI models



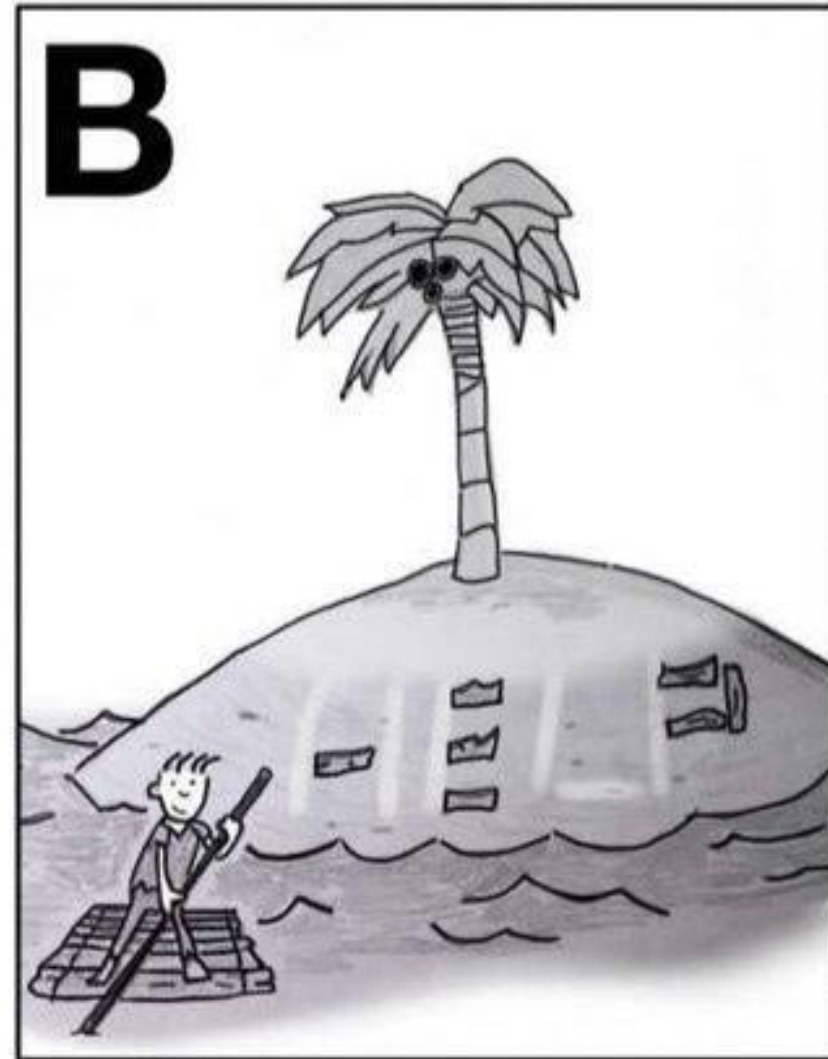
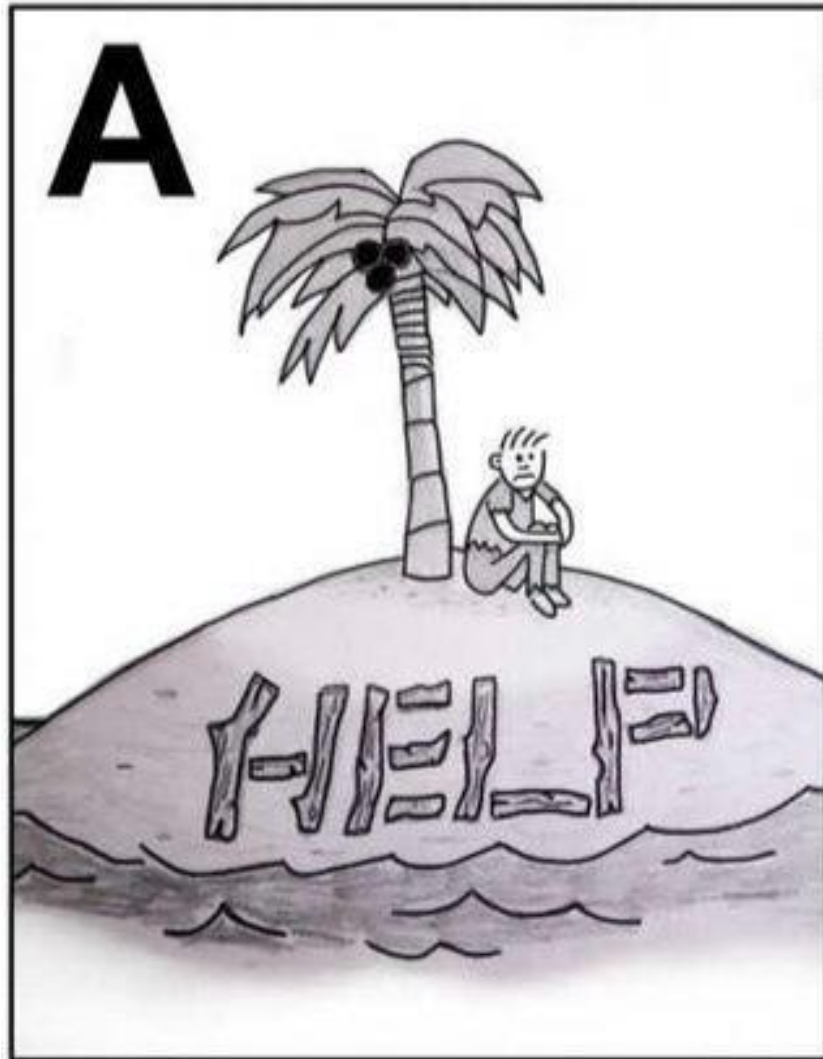
# Assessing accuracy

Benchmarking using standardized tests for:

- Language understanding
- General knowledge & common sense
- Reasoning skills
- Coding



It's not what you have, it's what you do with it



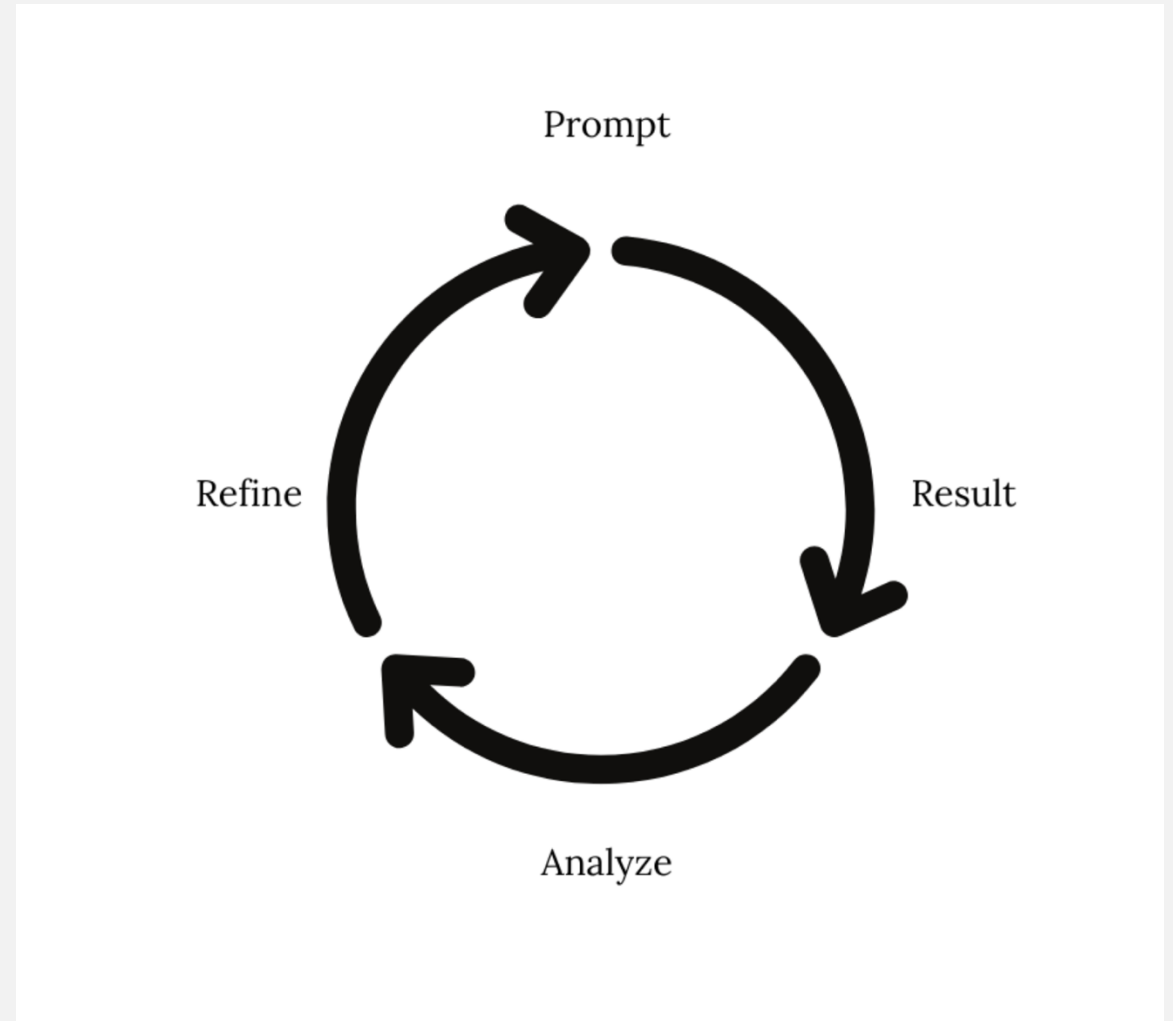
# Importance for Economic Developers

An aerial, top-down view of a vibrant, stylized town. The houses are in various colors like red, blue, yellow, and green, with different roof styles. There are many green trees scattered throughout the town. A road with a white dashed line runs through the scene. The overall style is clean and modern, resembling a digital illustration or a high-quality rendering.

- Data-driven decisions
- Increased productivity
- Predictive Insights
- Competitive Advantage

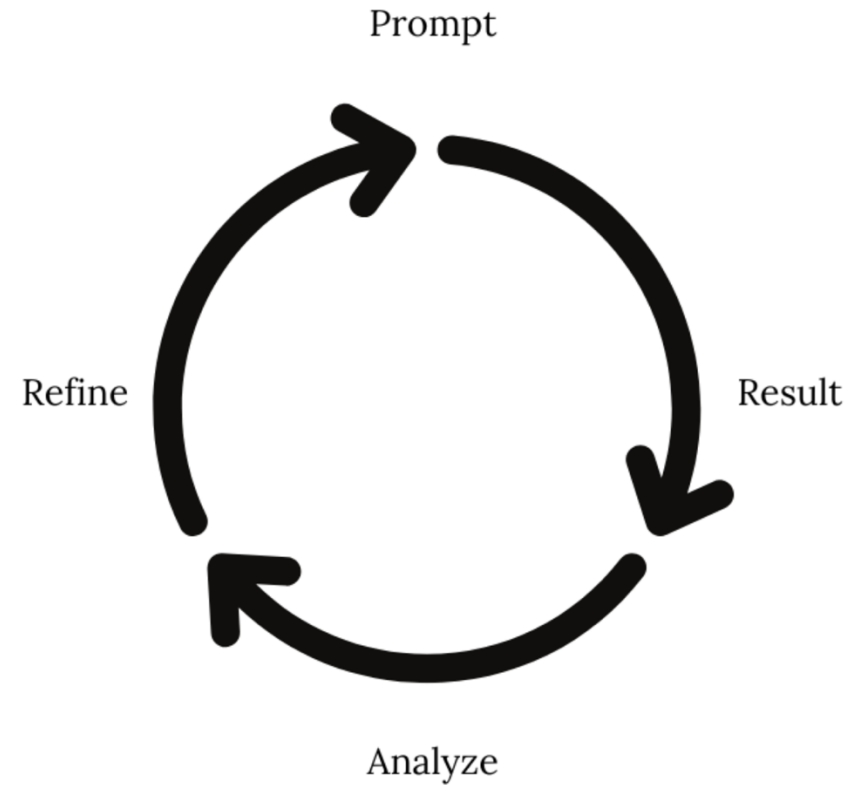
# What is a prompt in AI terms?

- Instruction, question, or statement given to AI language model
- Designed to elicit specific type of response
- Often needs to be refined for optimal response

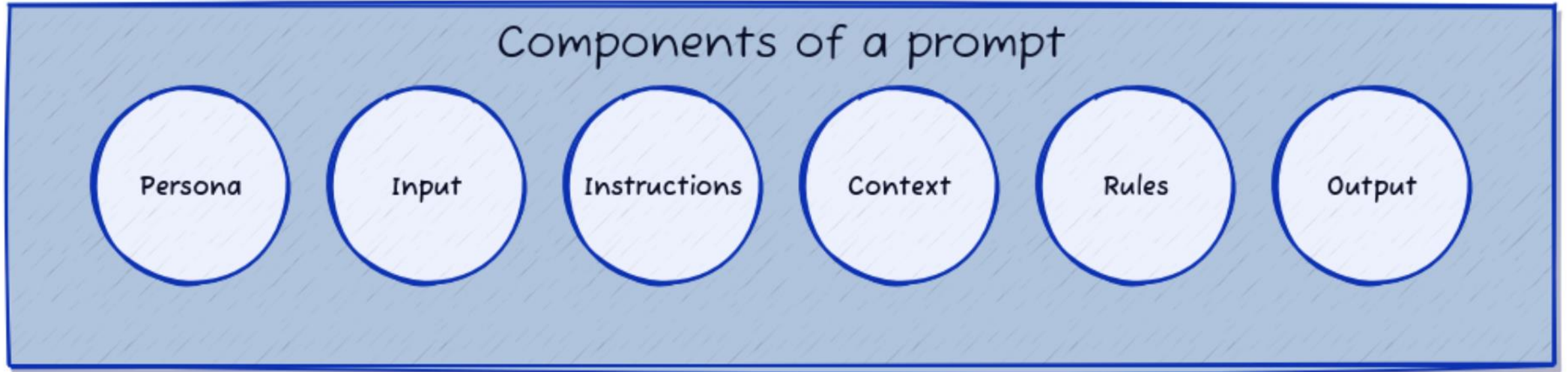


# Optimization matters

- **Efficiency:** Save time by yielding useful results quickly.
- **Effectiveness:** Greater likelihood of obtaining accurate and relevant outputs.
- **Control:** Allows you to guide the AI to produce outputs that meet your specific needs.



# Components of a prompt



# Optimization Tips & Tricks

- Use role-playing
- Provide a clear context
- Start with an action verb
- Be specific
- Give examples
- Refine

CHAT AI ➤



# More Tips & Tricks

- Use references
- Use double-quotes to emphasize important words
- Use text separators (shift + enter for new line)
- Indicate length of output
- Set the tone (professional, friendly, ...)

See video at

[https://www.youtube.com/watch?v=\\_6P1zYuayVQ](https://www.youtube.com/watch?v=_6P1zYuayVQ)

llama3:latest ▾ +

Set as default

Untitled 9.txt — Edited

You are an economic analyst working as an advisor to the economic development officer, assisting with data analysis and providing the interpretation of the data and underlying trends and providing actionable insights.

The following data shows the components of population change in our City of Bellaville. Please analyze the data and provide actionable insights to attract more residents into the City, and what demographic profile we should target.

....

Date	GEO	Births	Deaths	Immigrants	Emigrants	Returning emigrants	Net temporary emigrants	Net interprovincial migration
2002-01-01	Bellaville	217	176	21	52	17	22	-167
2003-01-01	Bellaville	205	186	18	56	19	21	-93
2004-01-01	Bellaville	217	178	27	48	17	16	-135
2005-01-01	Bellaville	202	184	30	50	22	19	-50
2006-01-01	Bellaville	254	192	39	43	23	18	4
2007-01-01	Bellaville	245	197	51	17	24	7	239
2008-01-01	Bellaville	254	228	48	45	12	20	281
2009-01-01	Bellaville	276	218	50	21	22	10	65
2010-01-01	Bellaville	274	250	37	25	14	11	16
2011-01-01	Bellaville	247	209	43	37	15	17	-43
2012-01-01	Bellaville	244	223	48	26	16	10	-151
2013-01-01	Bellaville	227	207	34	33	8	13	-122
2014-01-01	Bellaville	242	236	75	61	13	25	80
2015-01-01	Bellaville	241	234	61	20	12	8	123
2016-01-01	Bellaville	250	246	76	54	15	22	79
2017-01-01	Bellaville	225	235	55	38	15	17	21
2018-01-01	Bellaville	204	235	76	63	13	30	-9
2019-01-01	Bellaville	205	259	66	42	23	25	93
2020-01-01	Bellaville	196	268	80	22	9	16	80
2021-01-01	Bellaville	212	284	46	47	9	24	104
2022-01-01	Bellaville	211	302	155	66	10	39	0

....

## CityViz Data Sources

**Statistics Canada**

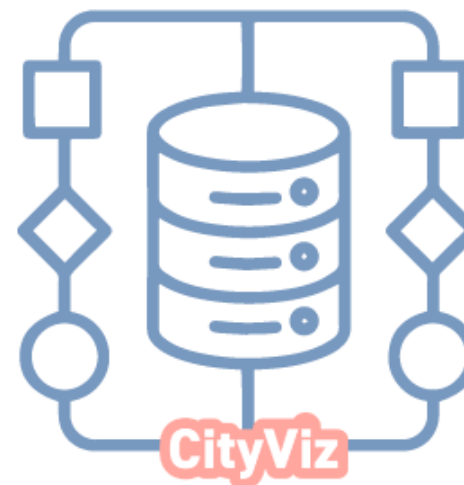
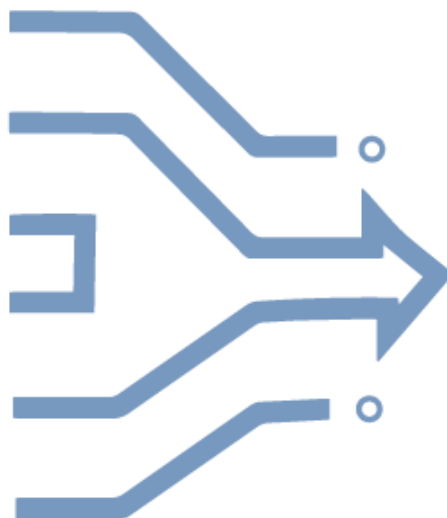
**Provincial open data**

**Regional & municipal  
open data**

**CMHC**

**3rd party data sources**  
(Spacelist, Telus, Moneris)

**Custom data**  
(building permits, business licences)



# CityViz Architecture

data portal



website widgets



Data updated automatically & maintained by CityViz



All data stored on servers in Canada

See video at

<https://youtu.be/UZkyVyLfnqo>

## Workforce Monthly Insights

### Key Insights

**Employment** increased by 900 jobs from the previous month and increased by 34,800 jobs compared to the same month last year.

**Full-time Employment** increased by 1,700 jobs from the previous month and increased by 29,500 jobs year-over-year.

**Part-time Employment** decreased by 800 jobs from the previous month and increased by 5,300 jobs year-over-year.

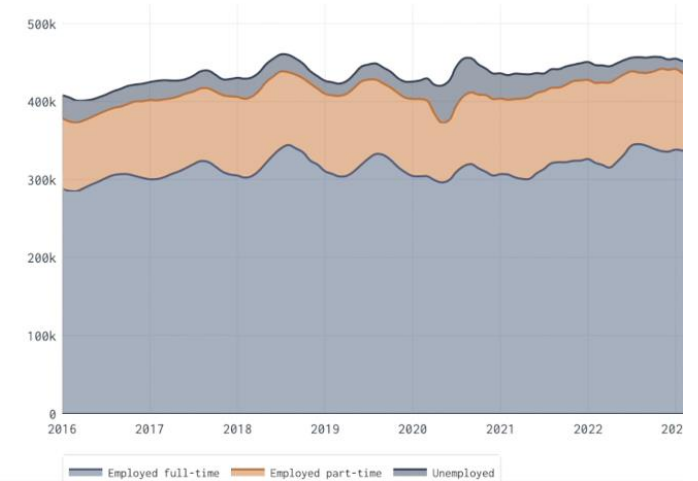
**Unemployed** people from th decreased by 2 same month la

### Workforce Composition by Status

In the most recent month, **Full-time Employment** increased by 1,700 jobs from last month and increased by 29,500 jobs compared to the same month last year.

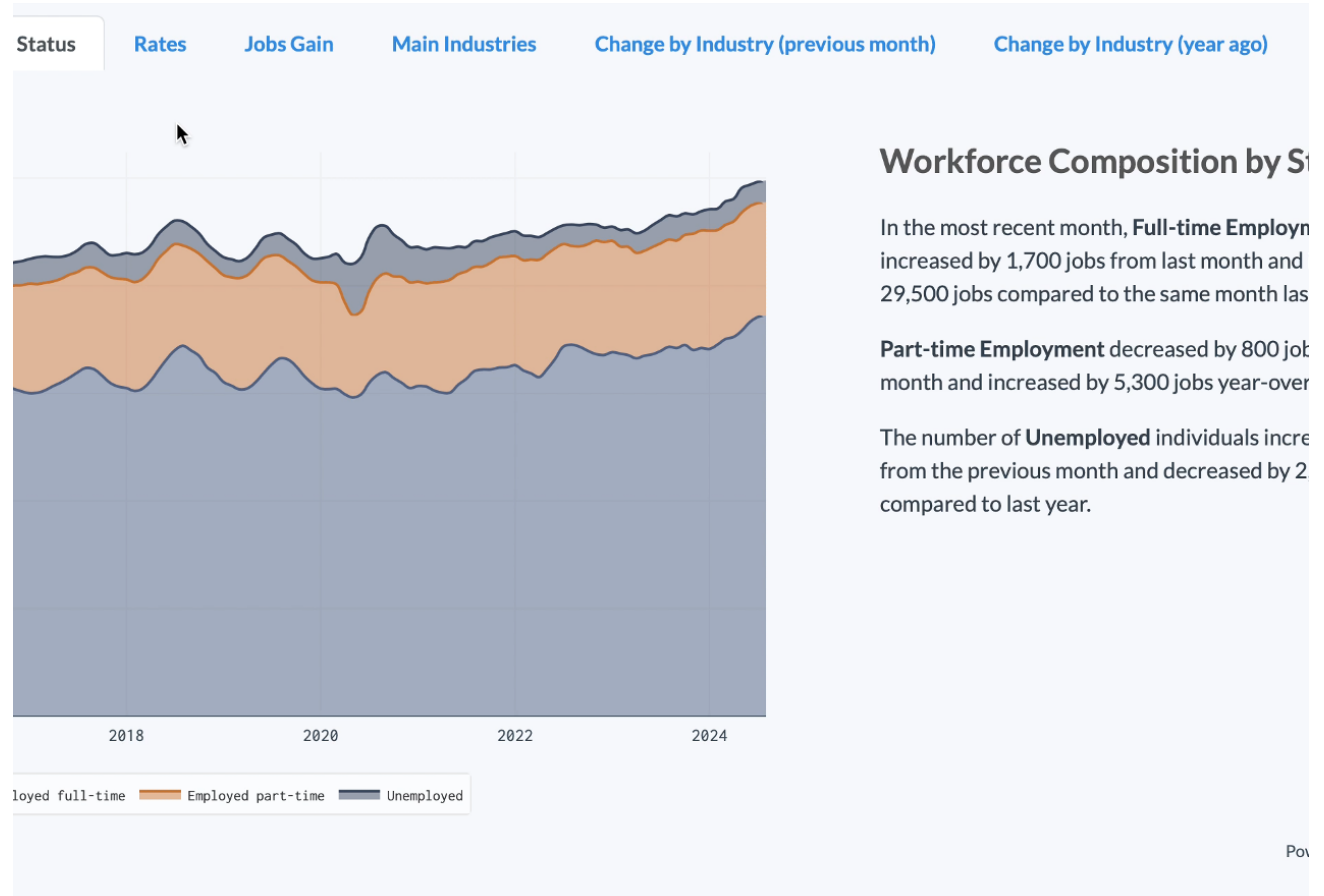
**Part-time Employment** decreased by 800 jobs from last month and increased by 5,300 jobs year-over-year.

The number of **Unemployed** individuals increased by 400 from the previous month and decreased by 2,500 compared to last year.



See video at

<https://youtu.be/Rd3SwxsHILk>



# What are your most time-consuming tasks when preparing reports and presentations?

## RESEARCH

- Researching information
- Research
- research research research
- Data
- Compiling data
- Fact checking
- Getting the technical details completed and understanding the audience to present
- Gathering and confirming stats
- maintaining data and outcomes.
- Content preparation

## FORMATTING

- Formatting. Need to better use AI!
- Visuals and graphics
- Engaging PowerPoint slides
- organization of the material
- Formatting
- Proof reading
- Putting it together
- Compilation
- Creating the PowerPoint and speaking notes



## Report Builder

Select your topics of interest in the dropdown boxes below and select report options.

<h3>Economic Indicators</h3> <p>Based on most recent data from various sources (Statistics Canada and others).</p> <p>Population <input type="text"/></p> <p>Business <input type="text"/></p> <p>Employment <input type="text"/></p>	<h3>Community Profile</h3> <p>Based on Census 2021 data.</p> <p>Population <input type="text"/></p> <p>Workforce <input type="text"/></p> <p>Housing <input type="text"/></p>	<h3>Real Estate Sales</h3> <p>Based on most recent real estate sales data.</p> <p>Real estate <input type="text"/></p>
---	---	--

Enter report title, select report format and click "Generate report" button.

Report title

Report format

PDF

Word

See video at [https://youtu.be/yRR\\_Y9nY9Pc](https://youtu.be/yRR_Y9nY9Pc)



### Economic Indicators

Based on most recent data from various sources (Statistics Canada and others).

Population

Business

Employment

### Community Profile

Based on Census 2021 data.

Population

Workforce

Housing

### Real Estate Sales

Based on most recent real estate sales data.

Real estate

---

Enter report title, select report format and click "Generate report" button.

Report title

Report format

PDF

Word

PowerPoint

Include data tables

See video at [https://www.youtube.com/watch?v=\\_6P1zYuayVQ](https://www.youtube.com/watch?v=_6P1zYuayVQ)

**Before:** “Answer FAQs about starting a business”

**After:**

You are a knowledgeable customer service assistant for the city's Economic Development Office.

*Input: Frequently asked questions about starting a small business in our city, including licensing, permits, zoning regulations, and financial assistance programs.*

Provide clear, accurate answers to each FAQ, ensuring information is up-to-date.

These responses will be used to update our website's FAQ section and assist in automating responses to public enquiries.

- Use friendly and approachable language.
- Keep answers concise and informative.
- Include links to relevant resources or departments.
- Ensure compliance with current city regulations.

**Output:** A set of well-crafted FAQ responses ready for publication and use in automated communication systems.

Two months FREE  
subscription to CityViz full  
range of data tools for  
your community, when  
you book a demo by end of  
October.



# Download resources

Tips for prompt optimization

Practical use cases with examples

- Streamlining New Business Supports
- Enhancing Investment Attraction
- Community Engagement for Economic Forum
- Writing an Economic Impact Report
- Predictive Analytics for Planning

