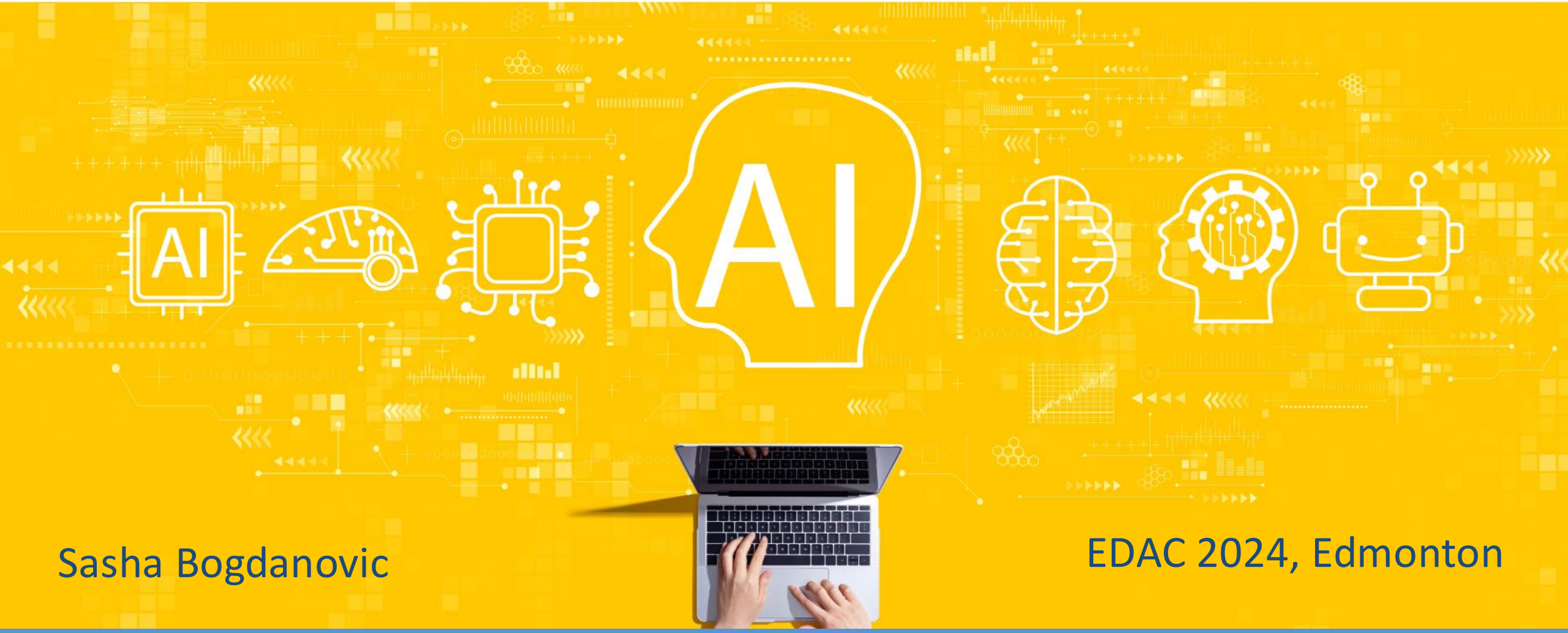
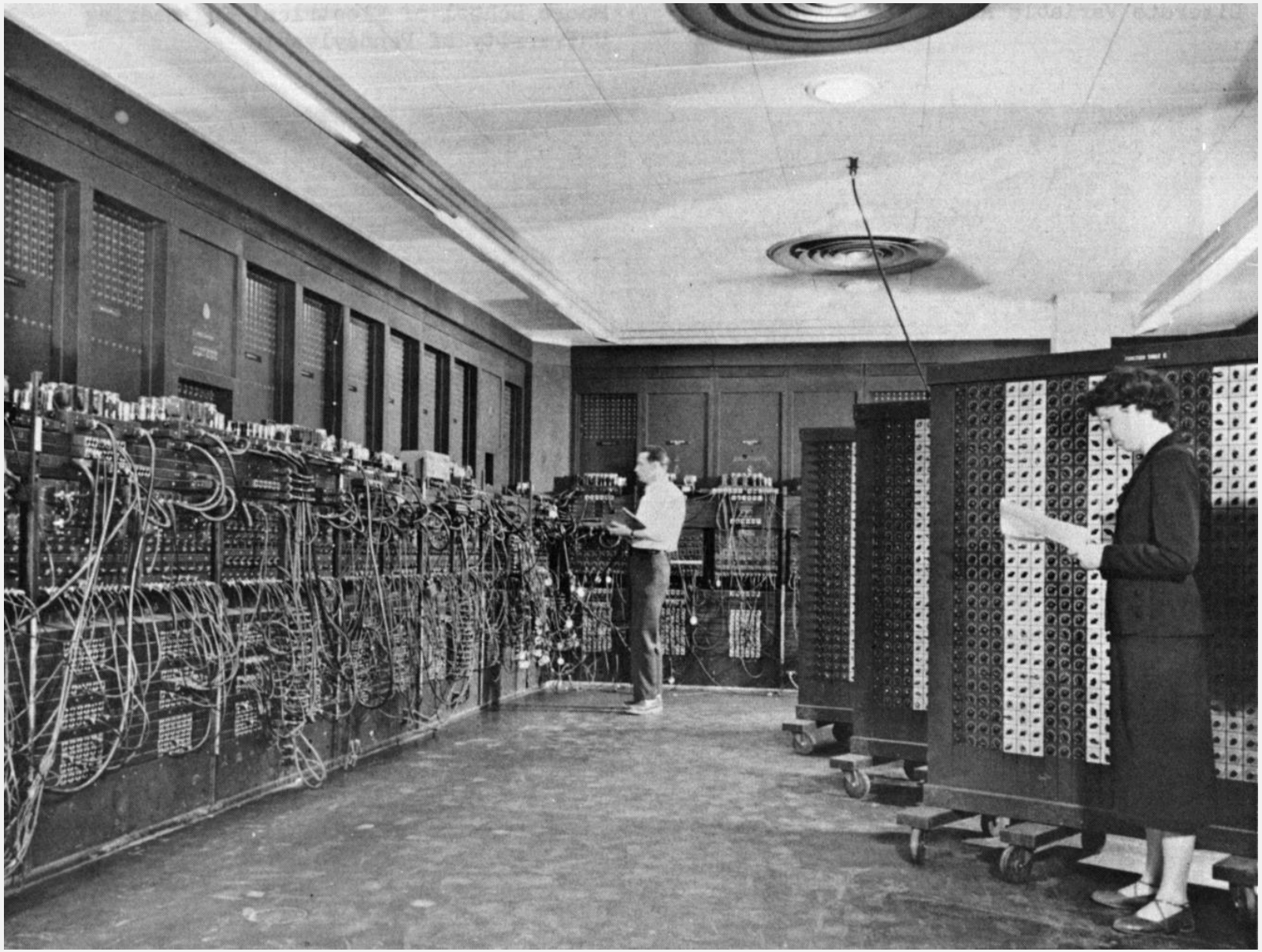
AI in Economic Development



Sasha Bogdanovic

EDAC 2024, Edmonton

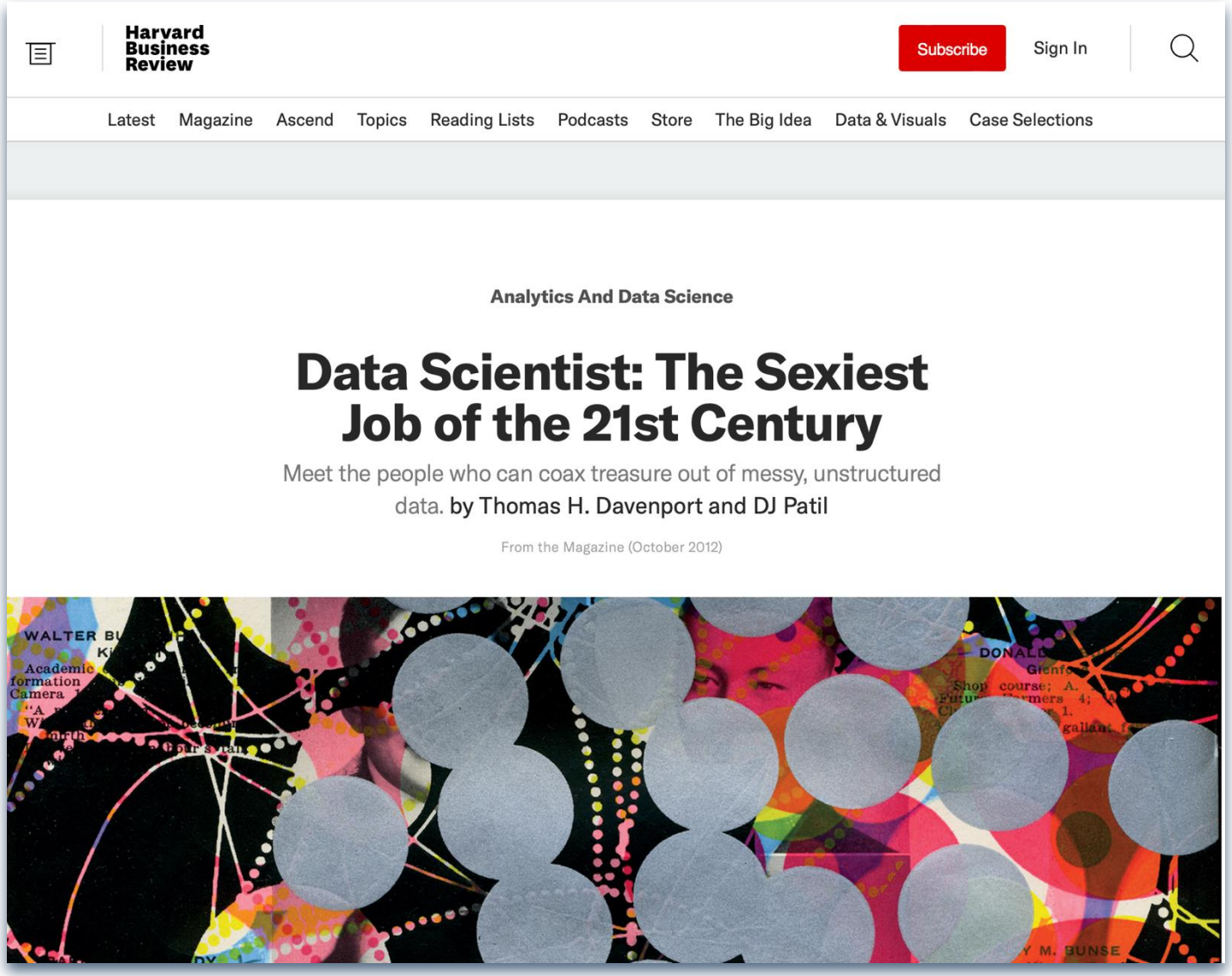
Machines performing tasks typically requiring human intelligence



AI Enablers

Technology that propelled accelerated innovation:

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

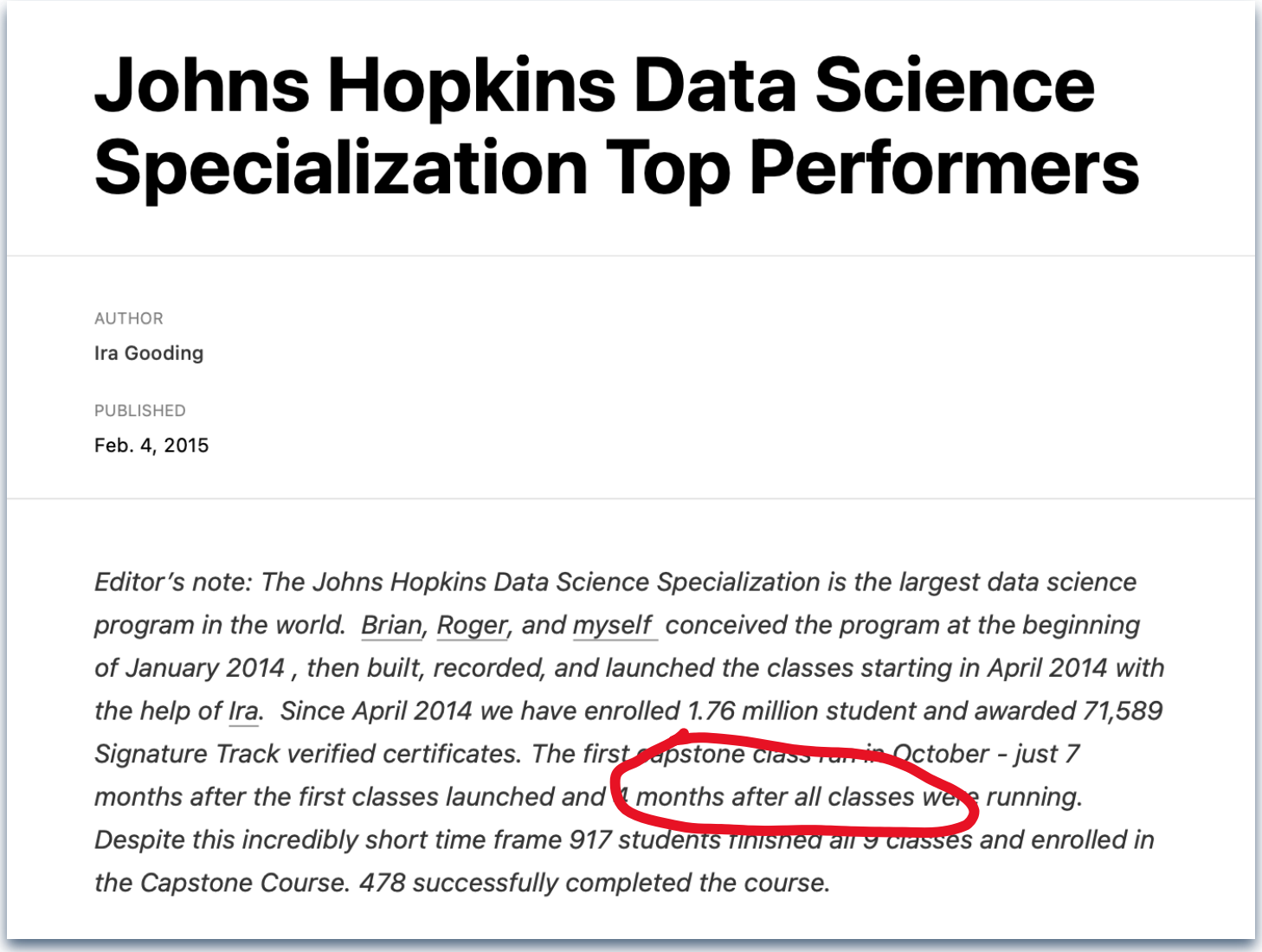


https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century

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

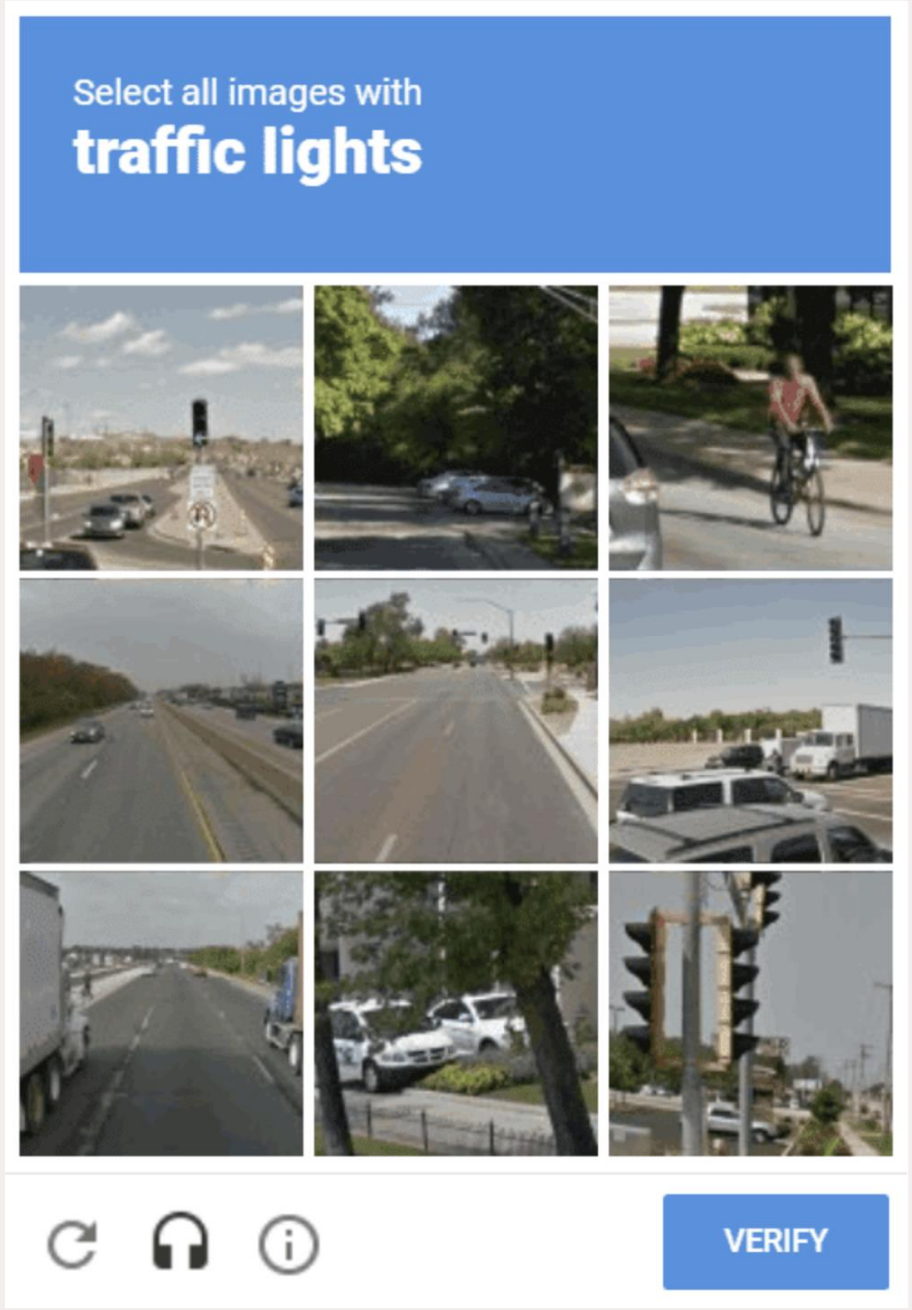
PUBLISHED
Feb. 4, 2015

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 4 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/

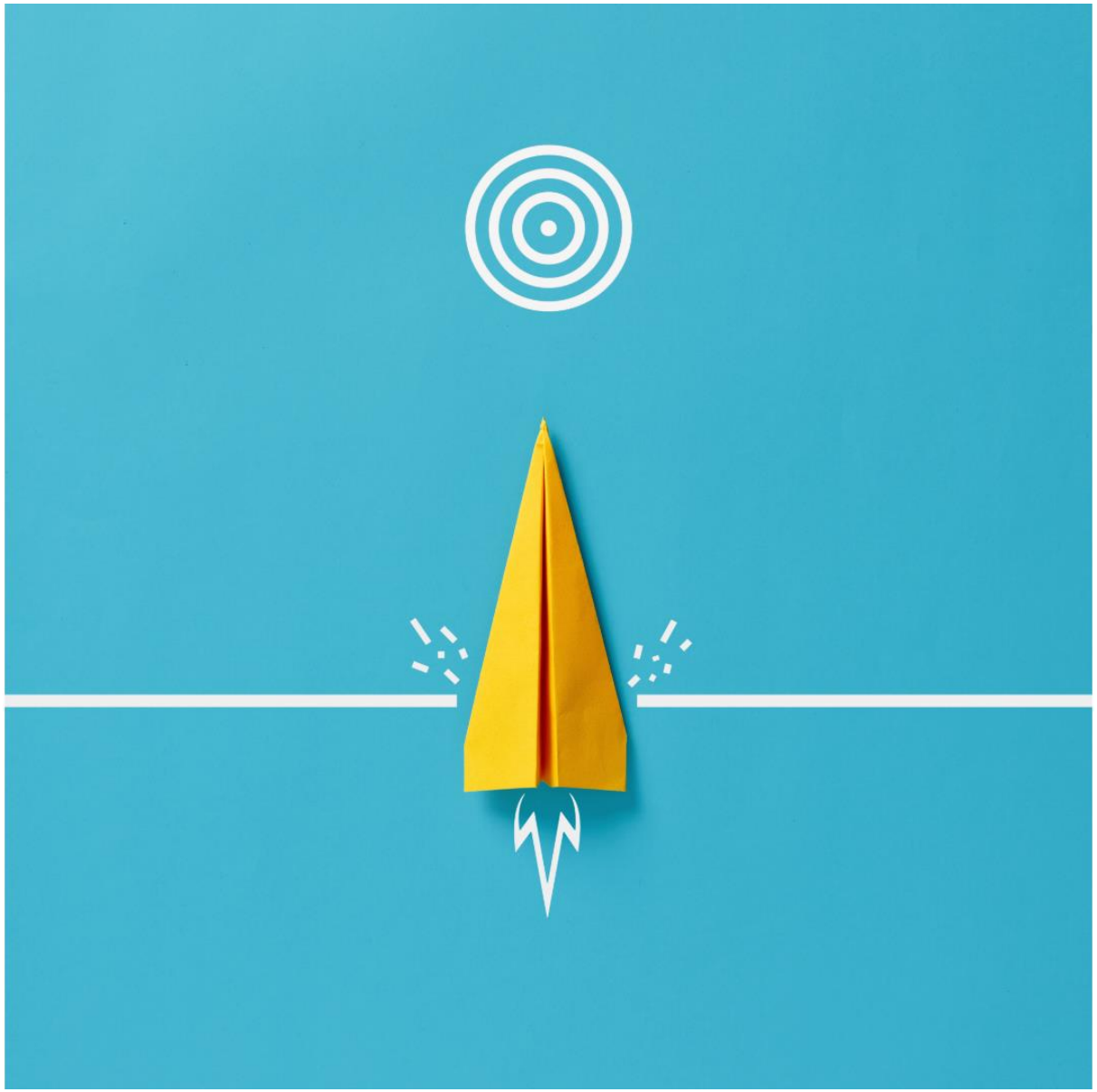
ML applications

- 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



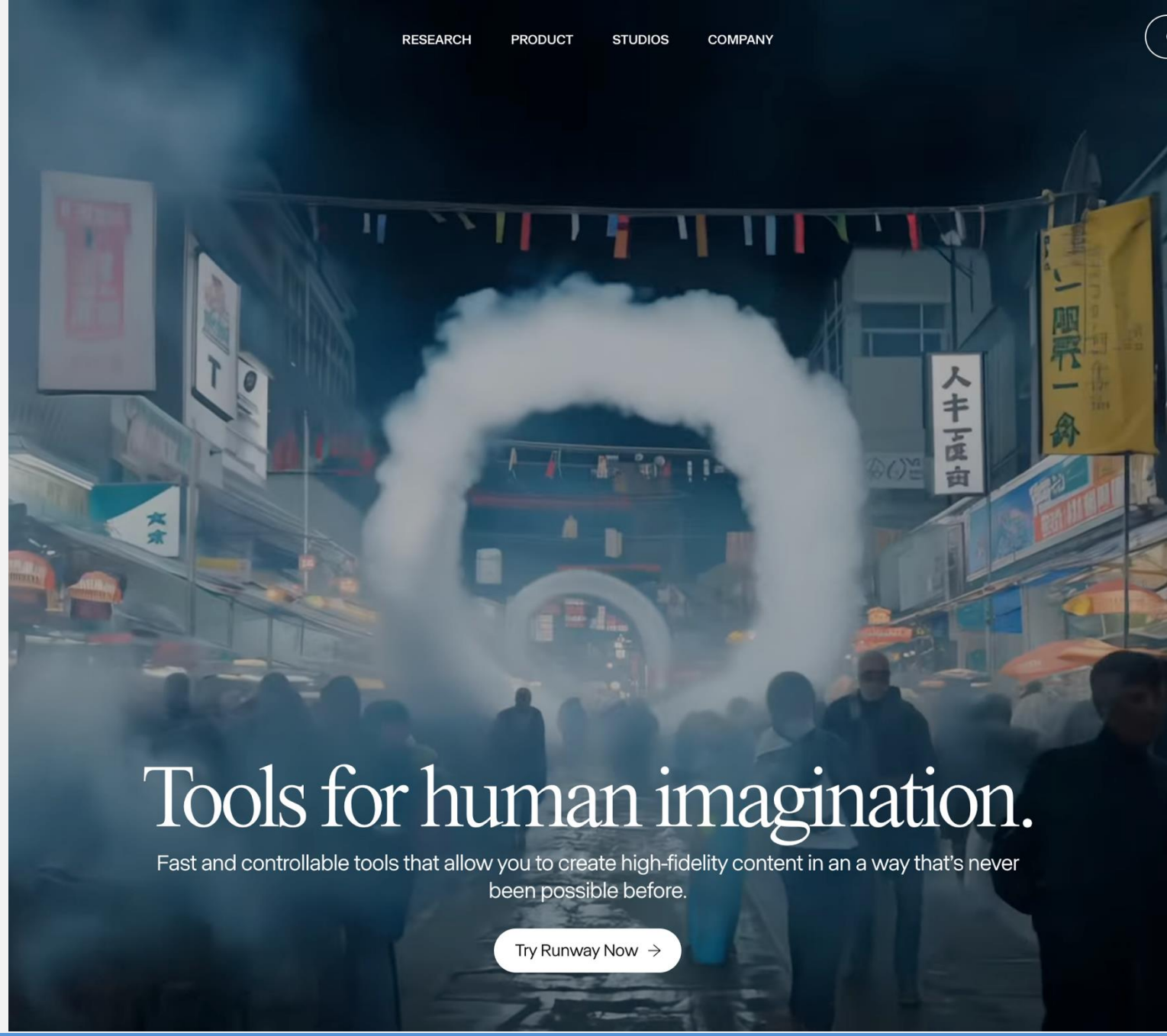
What about cats?

Starrin
Alfri Na
4GIFS.com

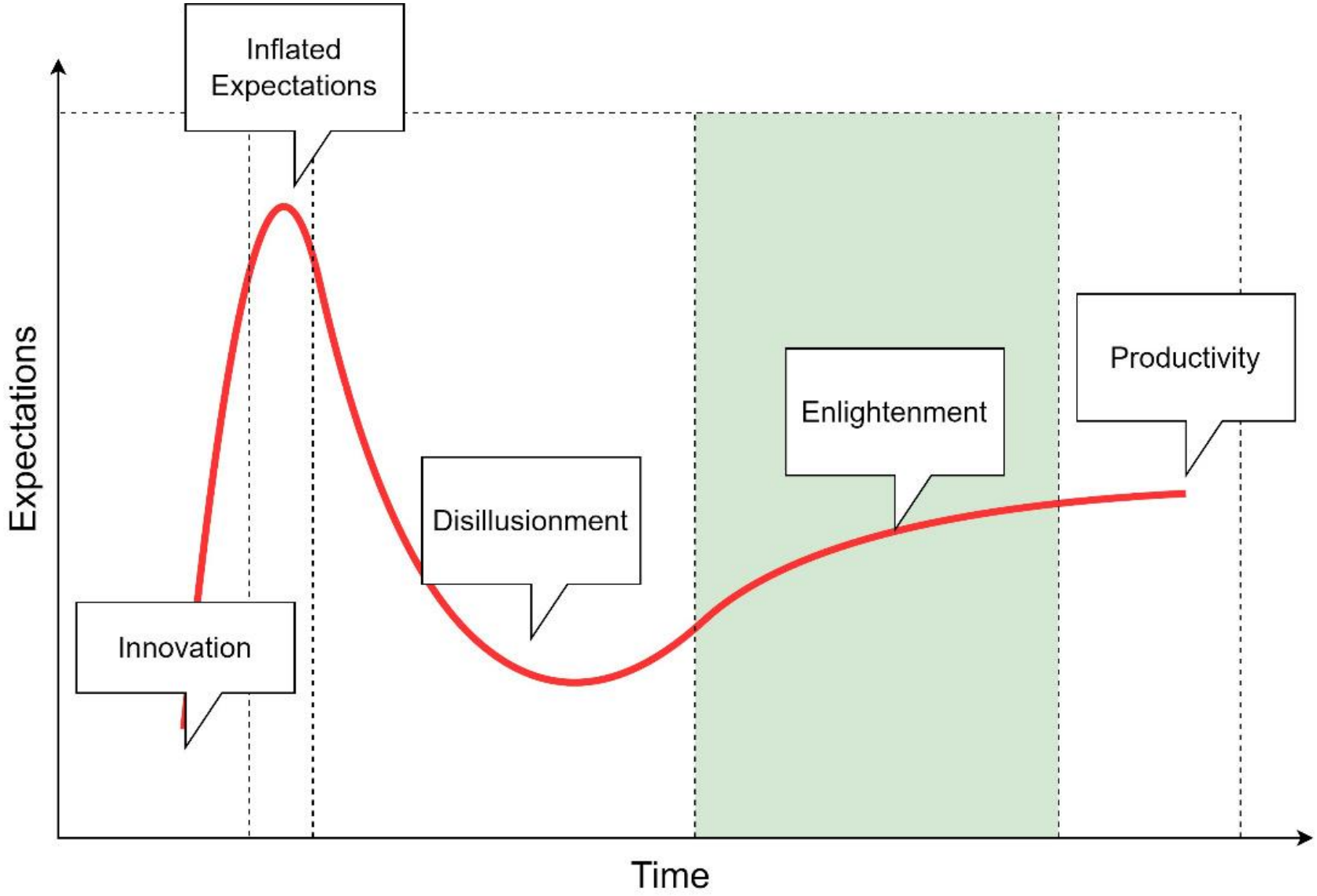
GIFS.com

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.”

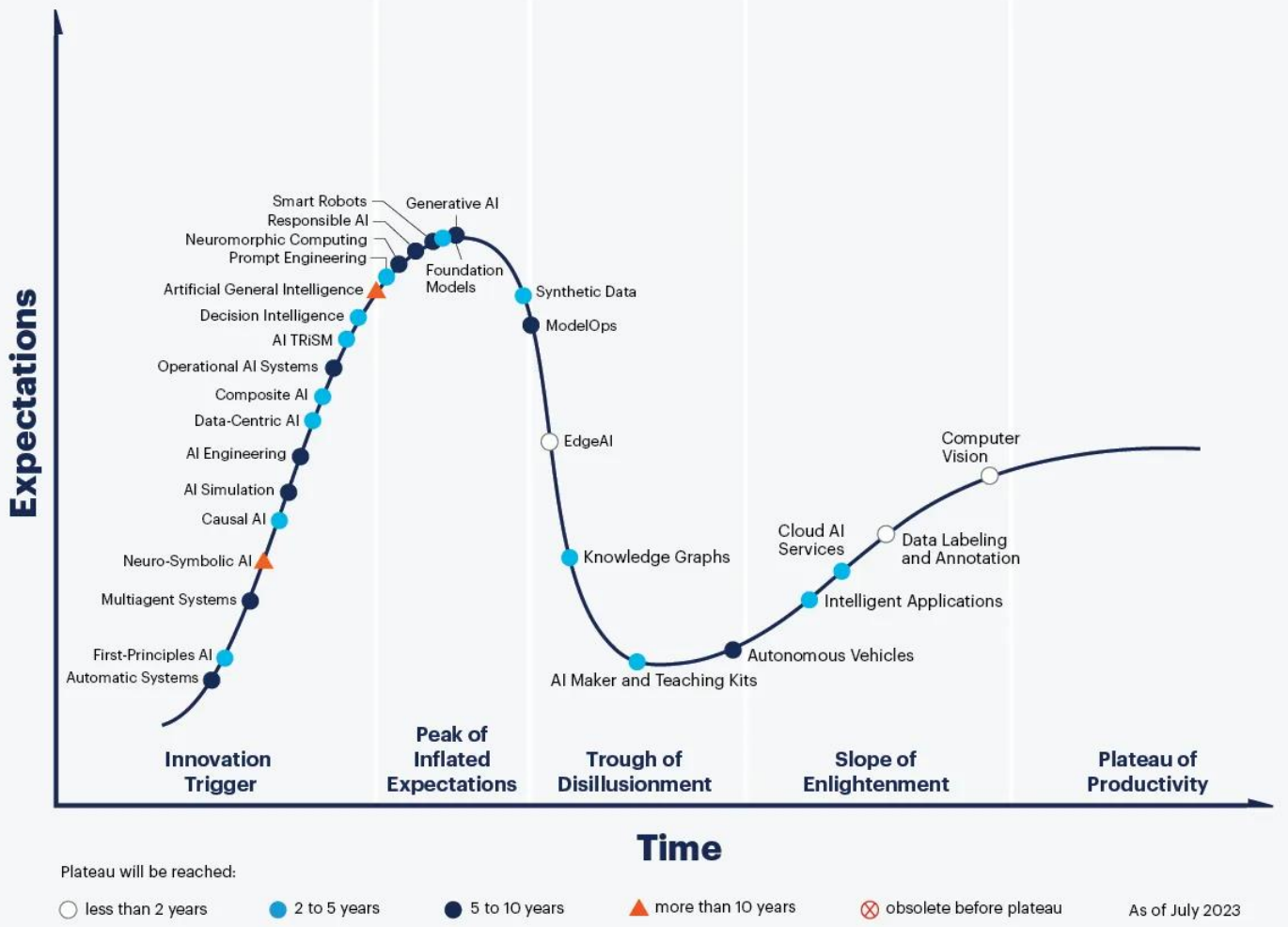
URL: runwayml.com



Gartner Hype Cycle



Hype Cycle for Artificial Intelligence, 2023



gartner.com

Source: Gartner
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Gartner

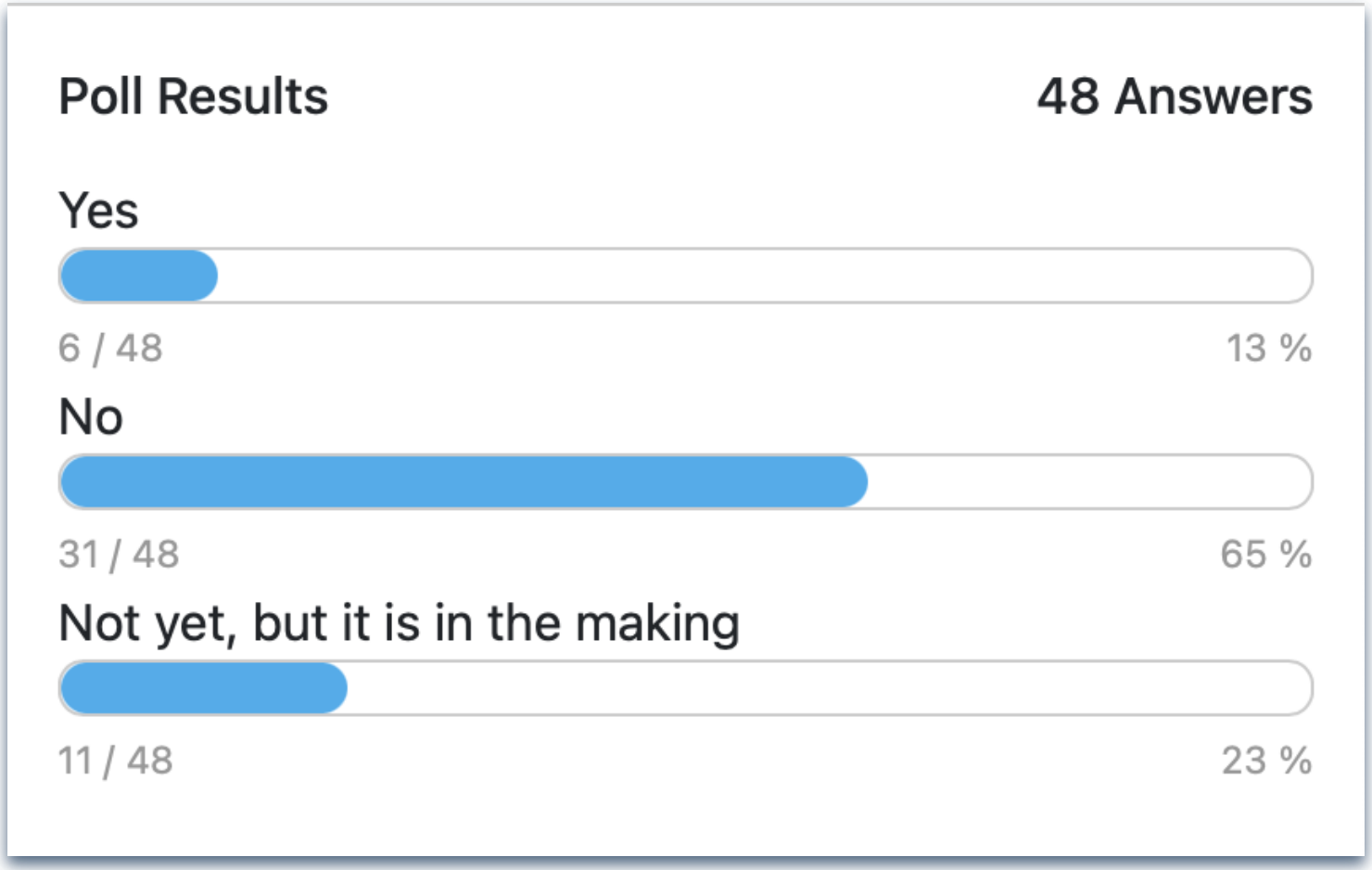
Risks

- 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 19th century

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

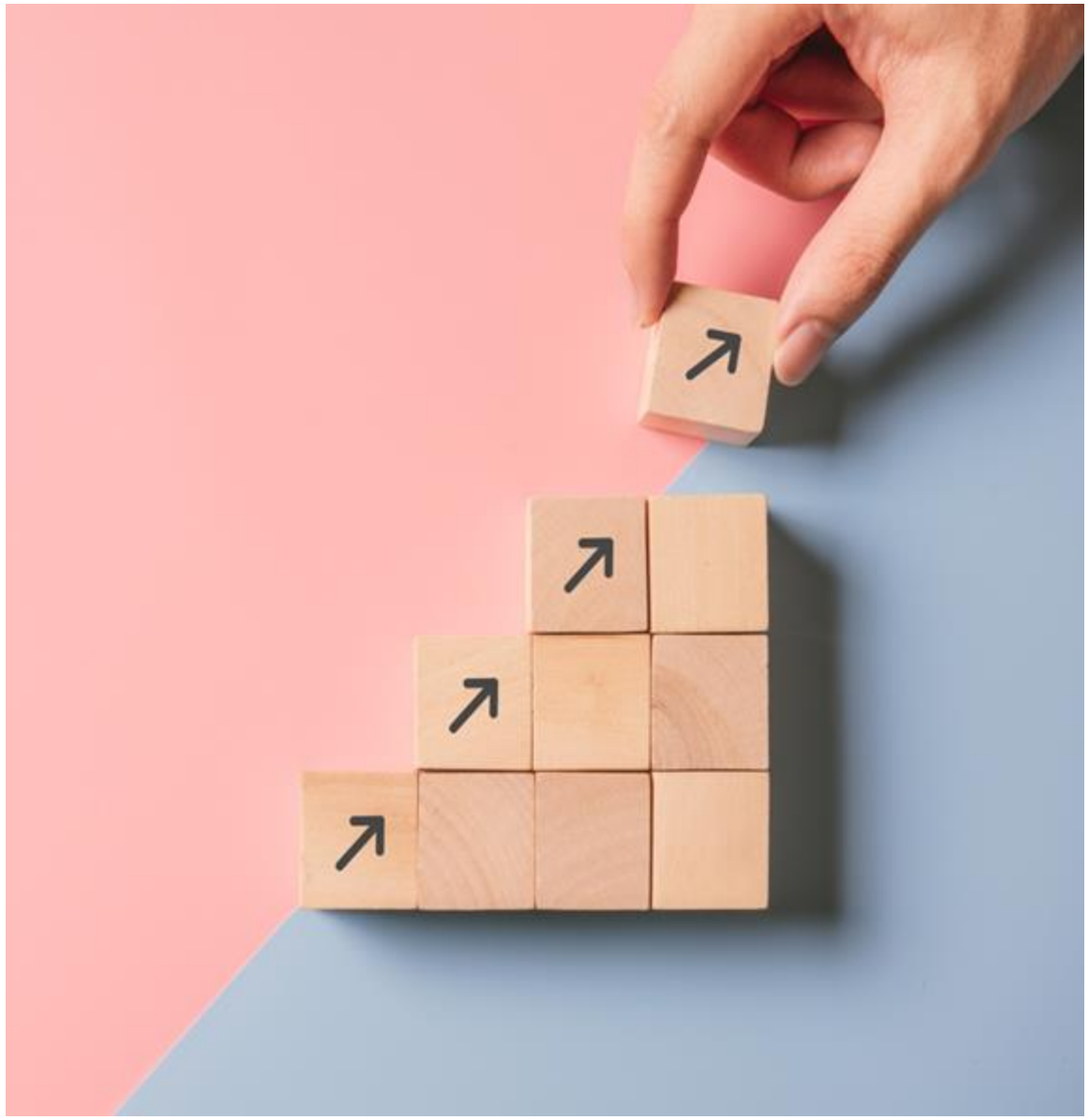


Solutions

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

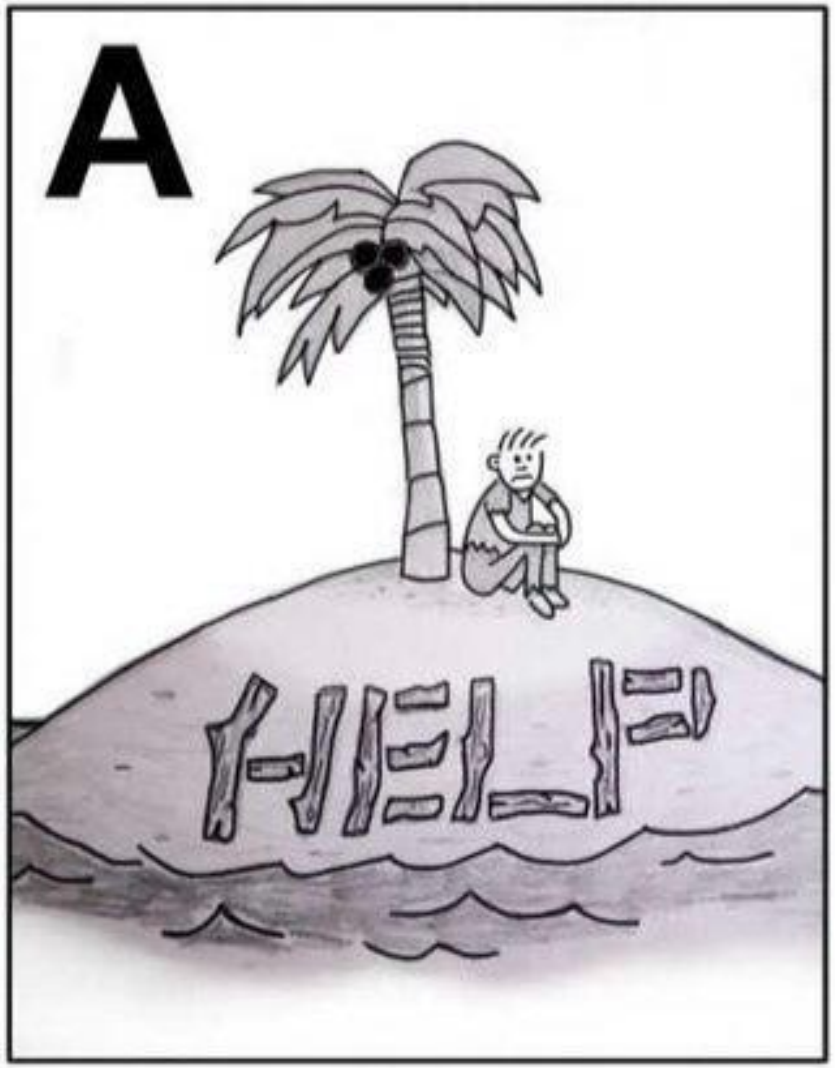


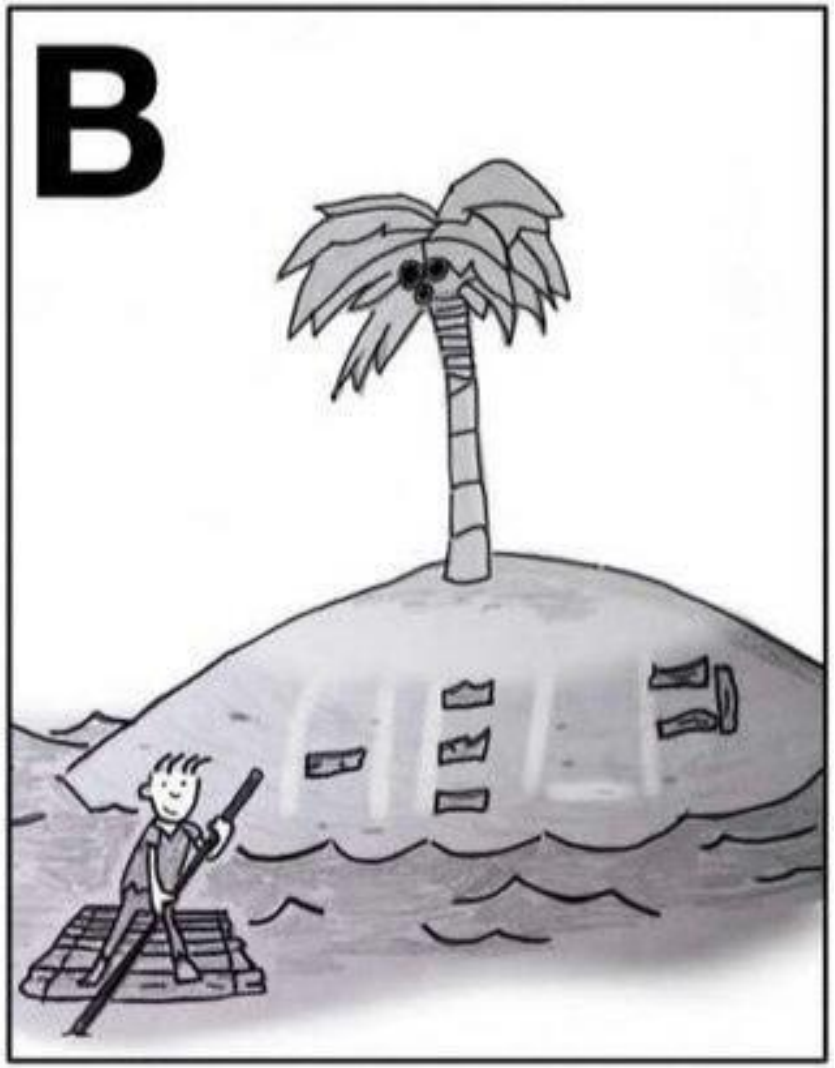
Assessing accuracy

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



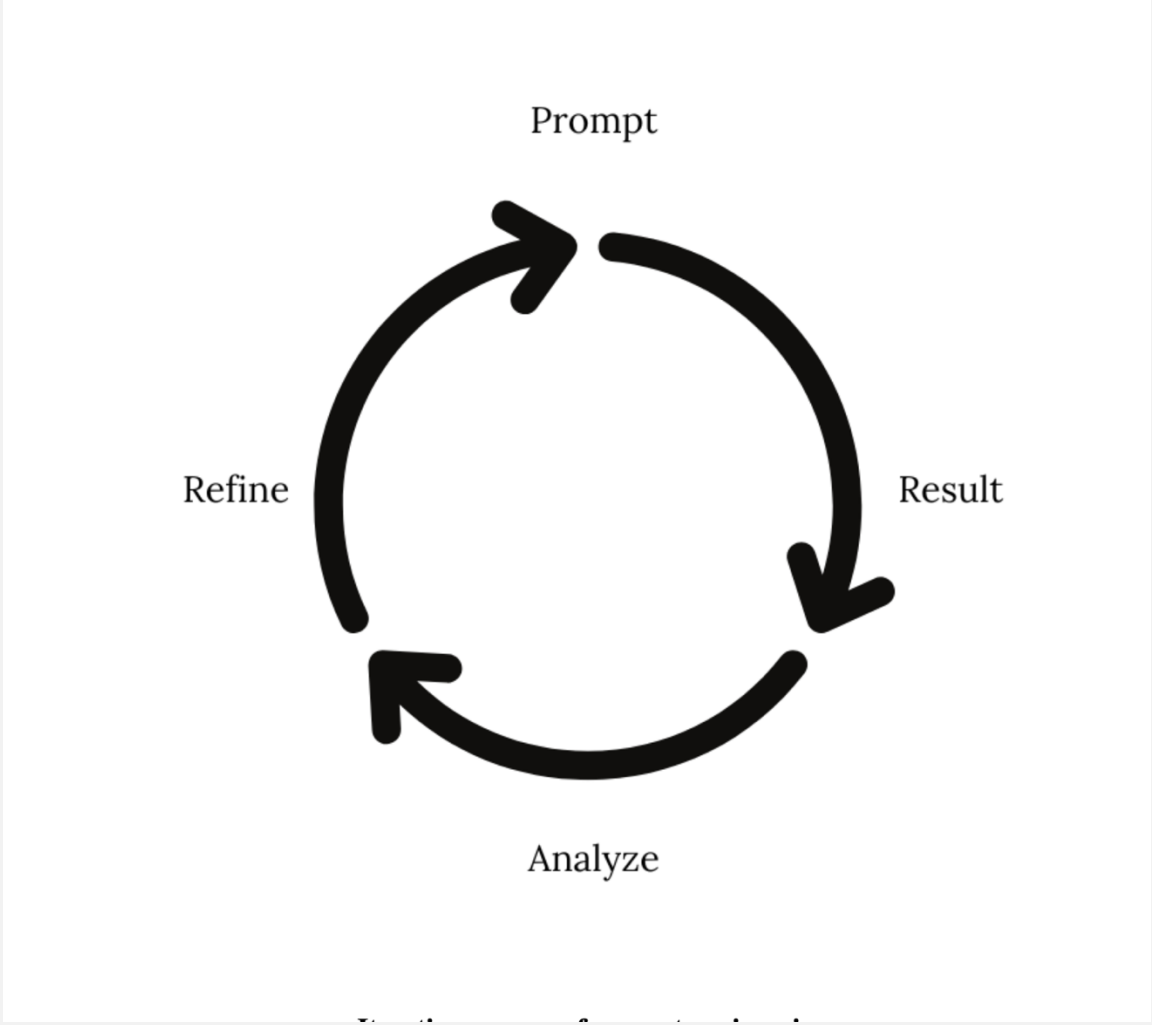


Importance for Economic Developers

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

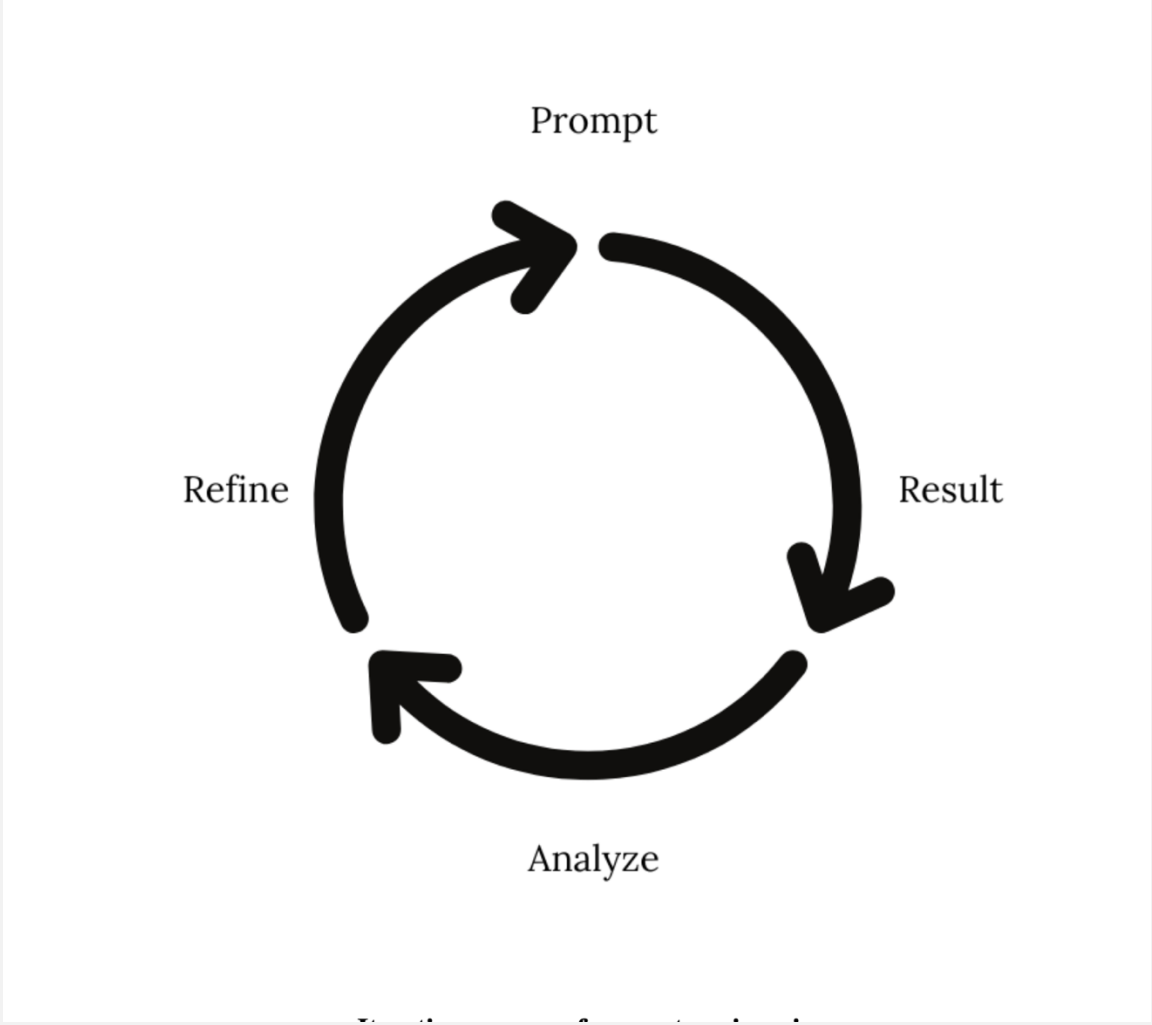
What is a prompt in AI terms?

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

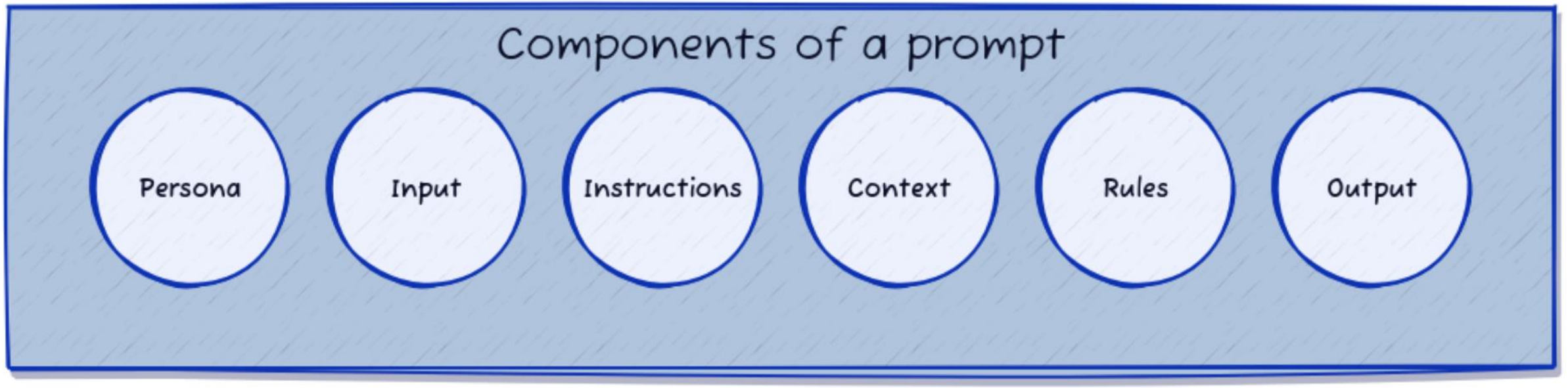


Optimization matters

- **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

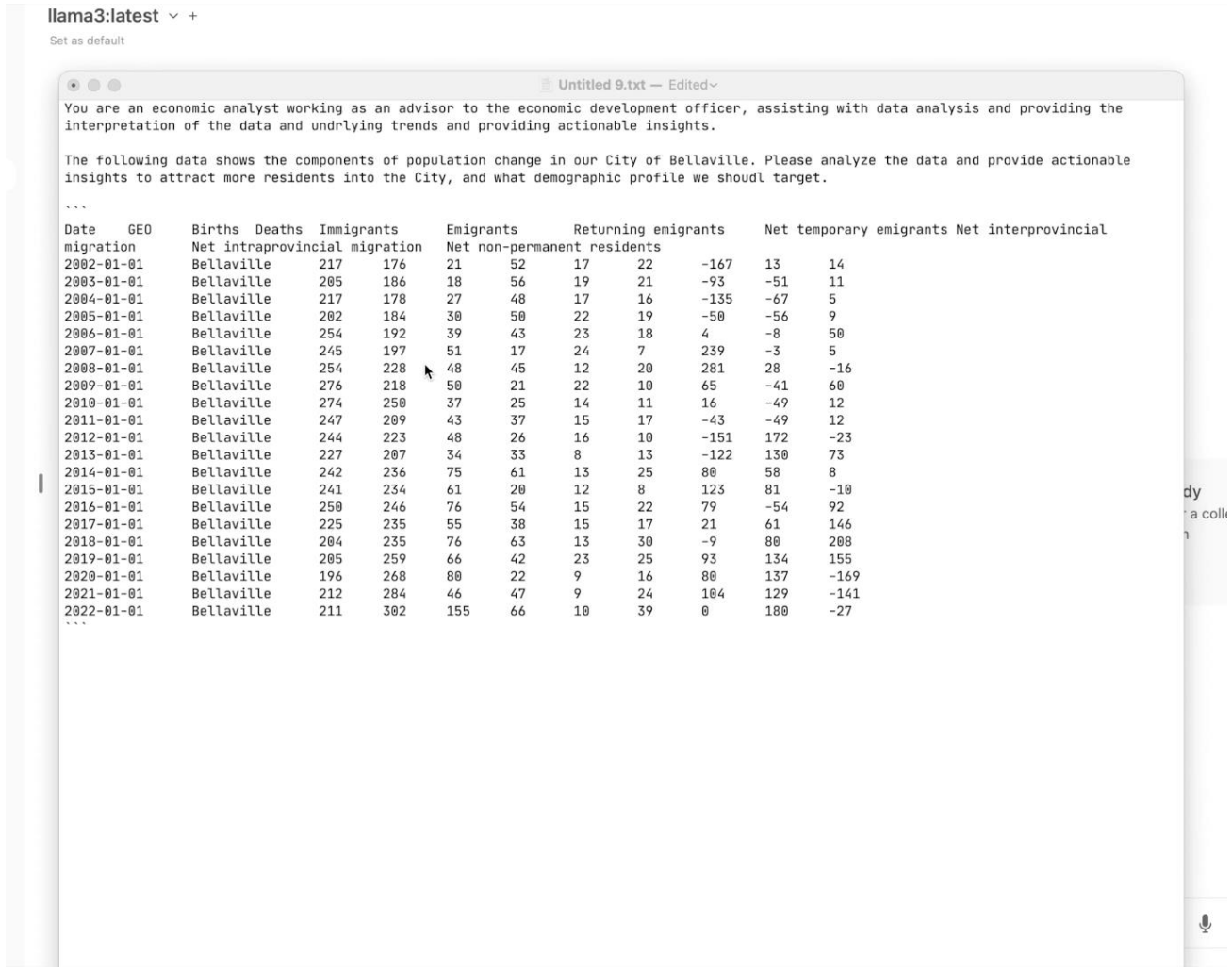
- Use role-playing
- Provide a clear context
- Start with an action verb
- Be specific
- Give examples
- Refine

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



CityViz Data Sources

Statistics Canada

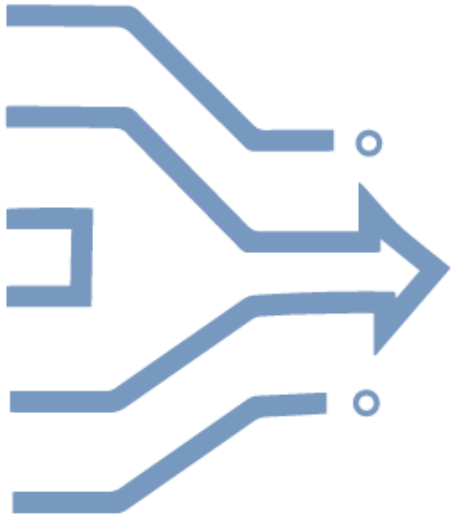
Provincial open data

Regional & municipal open data

CMHC

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

Custom data
(building permits, business licences)



CityViz Architecture

data portal

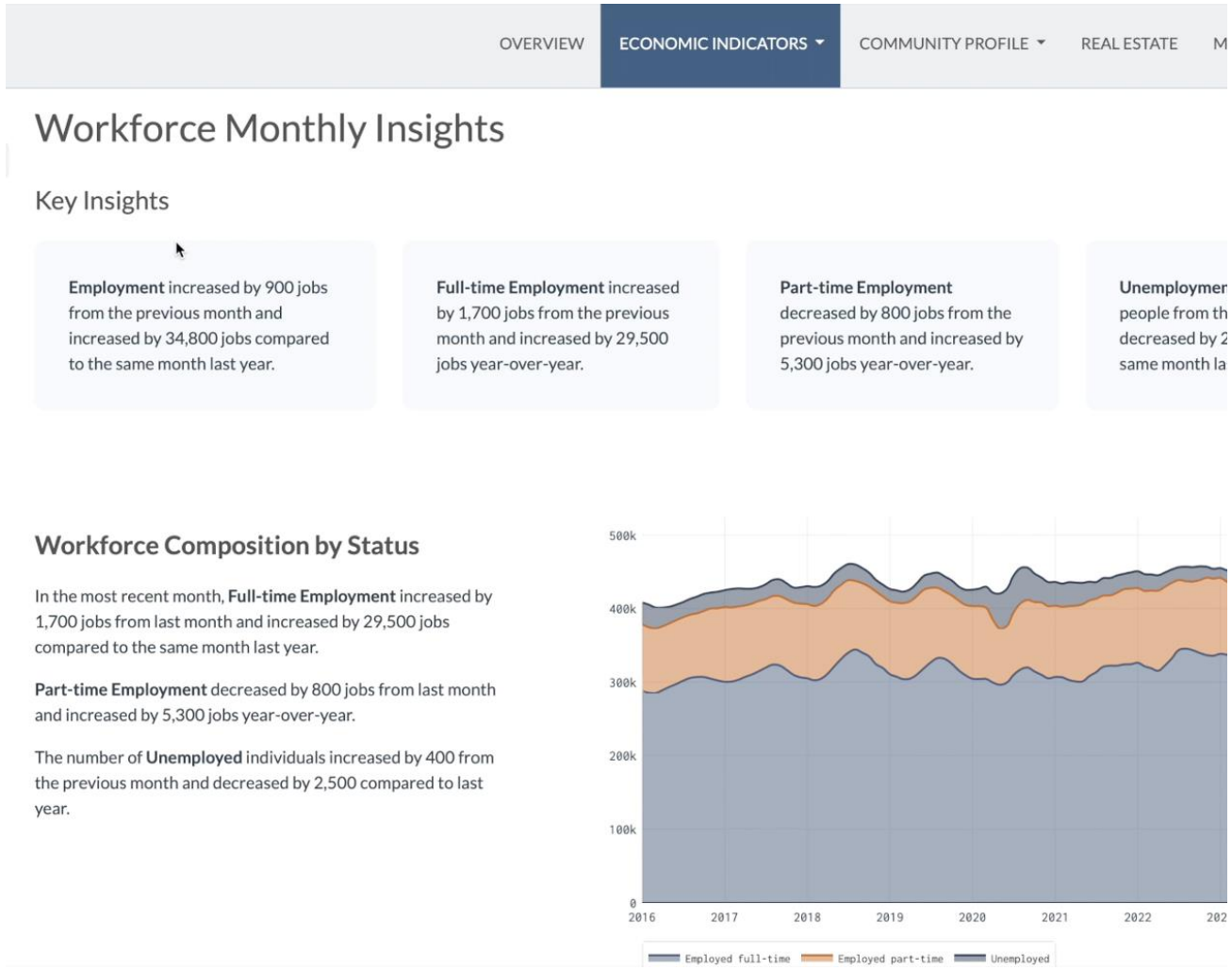
website widgets

Data updated automatically & maintained by CityViz

All data stored on servers in Canada

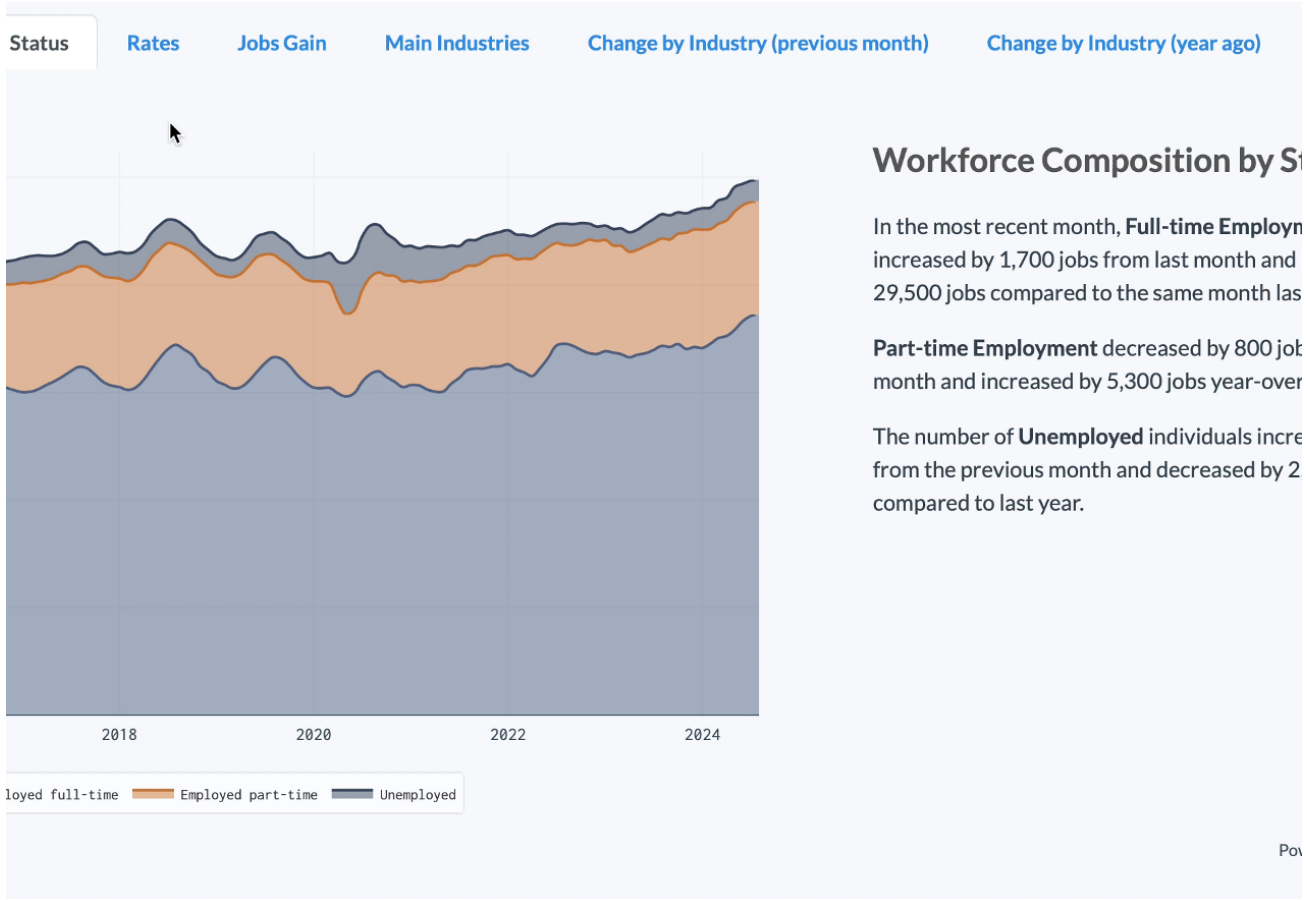
See video at

https://youtu.be/UZkyVyLfnqo



See video at

https://youtu.be/Rd3SwxsHILk



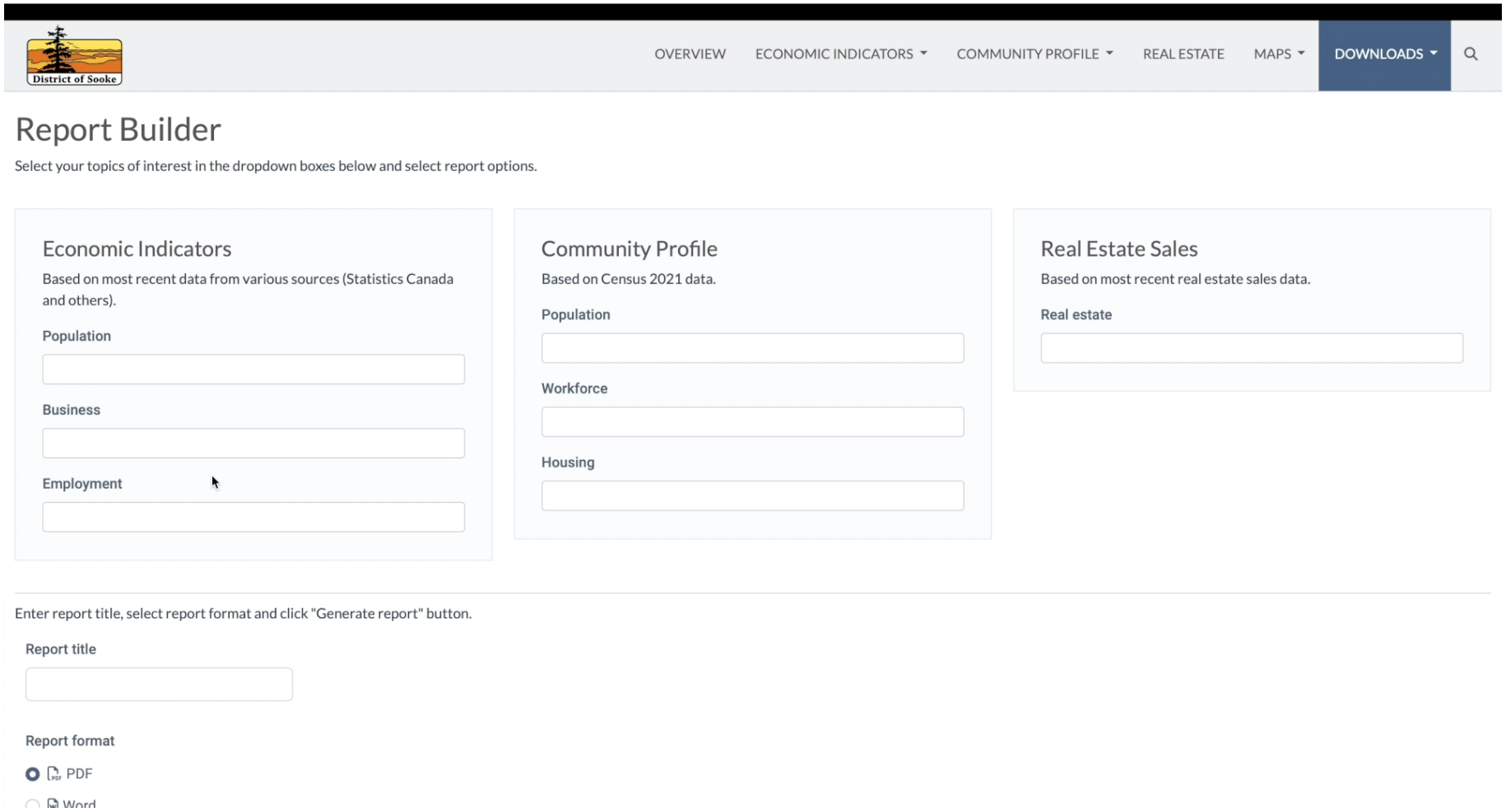
What are your most time-consuming tasks when preparing reports and presentations?

RESEARCH

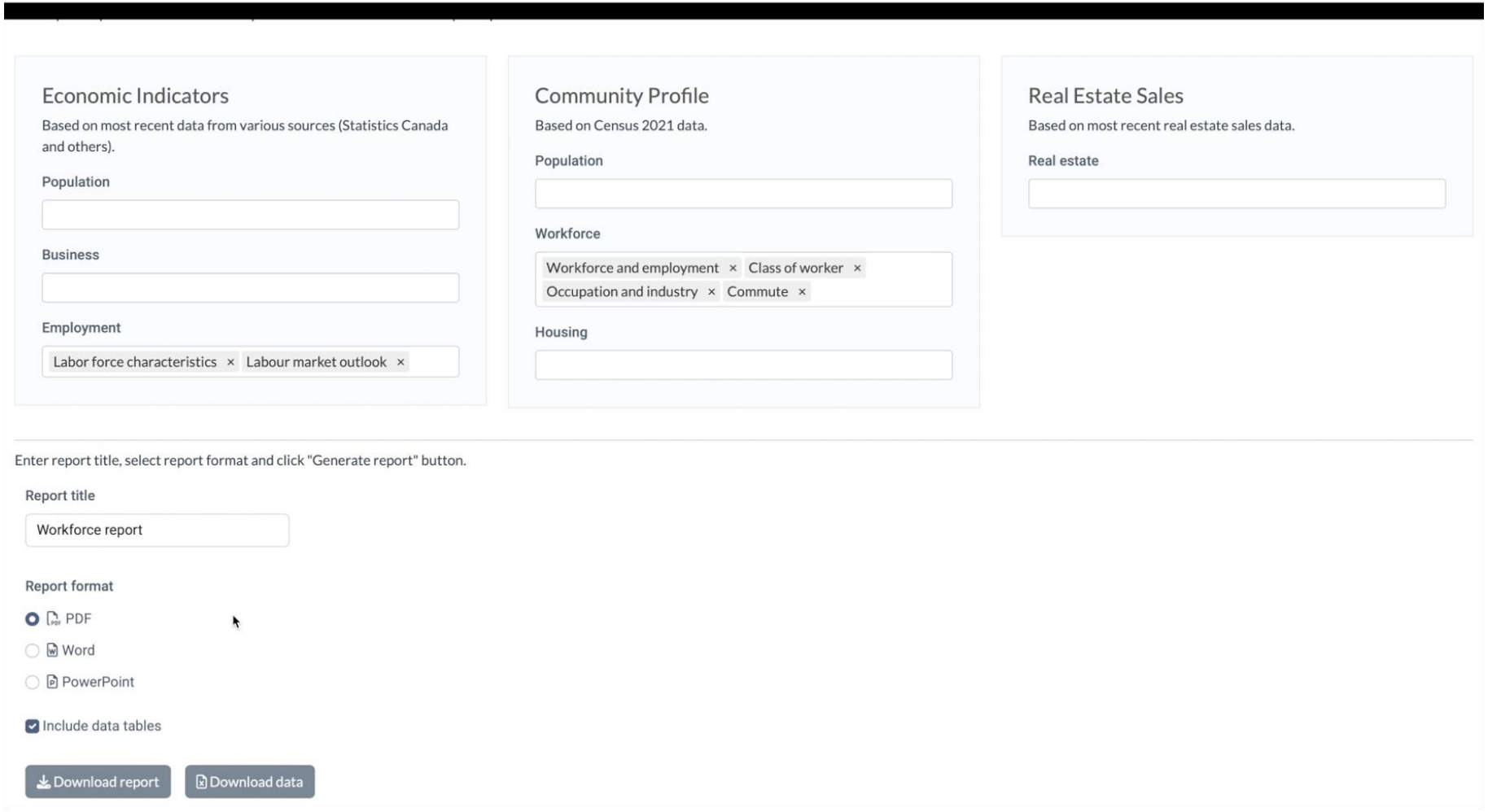
- Researching information
- Research
- research research research
- Data
- Compiling data
- Fact checking
- Getting the technical details completed and understanding the audience to present
- Gathering and confirming stats
- maintaining data and outcomes.
- Content preparation

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



See video at https://youtu.be/yRR_Y9nY9Pc



See video at 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**