

Analyzing Digital Analytics Data Locally with GenAI

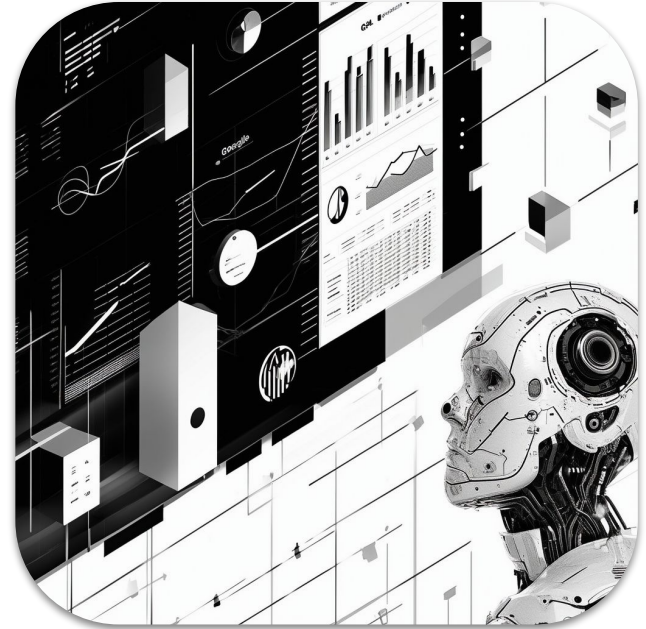
NLP from scratch 


Measure Camp Toronto
Saturday, October 5th, 2024

     @nlpfromscratch



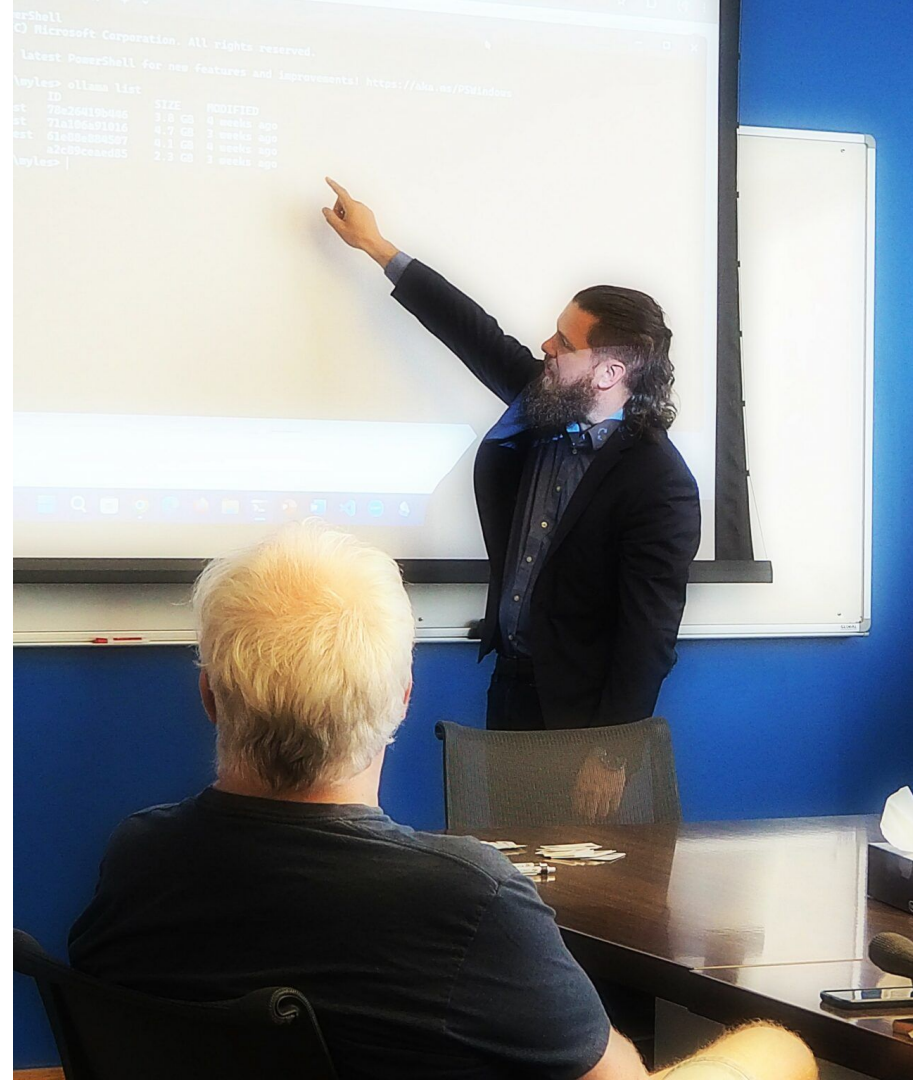
nlpfromscratch.com/measurecamp



NLP from scratch 

Who am I?

- Data Scientist
- Consultant
(Agency world, Big 5, independent)
- Educator
(Bootcamp space, traditional ed., independent)
- Meetup junkie and community builder



PRESENTER(S) NAMES

Myles Harrison

SESSION TITLE

Analyzing Digital Analytics Data with GenAI

DESCRIBE YOUR SESSION

In this hands-on technical session, we will walk through setting up JupyterAI to allow using GenAI models for coding assistance locally.

To demonstrate, we will analyze digital analytics data exported from a common platform using python and show that with the help of generative AI, even non-technical practitioners can analyze large datasets locally with minimal coding knowledge.

LEVEL OF EXPERTISE



BEGINNER



INTERMEDIATE



ADVANCED

DELIVERY STYLE



WORKSHOP



DISCUSSION



PRESENTATION

SUBJECT AREA



TECHNICAL



ANALYTICAL

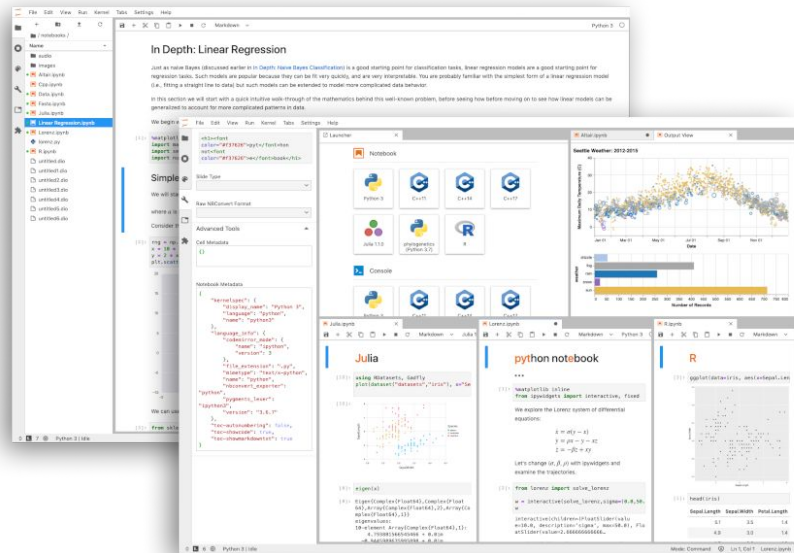


BUSINESS



Jupyter

- Jupyter is an open-source web-based interactive computing environment
- Enables users to create and share documents that contain live code, equations, visualizations, and narrative text
- Now the standard tool for doing data science and AI development work
- Can read more at [Jupyter.org](https://jupyter.org) or install via `pip install jupyterlab`



Jupyter AI

- Jupyter AI integrates generative AI models into Jupyter, allowing you leverage LLMs in notebooks and improve your productivity
- An `%%ai` magic that turns the Jupyter notebook into a reproducible generative AI playground
- Features a native chat UI in JupyterLab (Jupyter AI) that serves a conversational assistant / AI pair programmer
- Support for a wide range of generative model providers and models (AI21, Anthropic, Cohere, Gemini, Hugging Face, MistralAI, OpenAI, SageMaker, NVIDIA, Ollama, etc.).

The screenshot displays a JupyterLab environment. On the left, a sidebar shows the Jupyter AI chat interface. The main area contains a notebook with the following code:

```
[1]: %reload_ext jupyter_ai
[2]: %%ai chatgpt --format code
    A program that asks me for my name and then greets me by my name, in Polish
[3]: name = input("Jak masz na imię? ")
    print("Cześć " + name + "!")
    Jak masz na imię? foo
    Cześć foo!
[4]: %%ai chatgpt --format code
    A function that computes the lowest common multiples of two integers, and a
[5]: def lcm(x, y):
    if x > y:
        greater = x
    else:
        greater = y
    while True:
        if (greater % x == 0) and (greater % y == 0):
            lcm = greater
            break
        greater += 1
    return lcm
def test_lcm():
    assert lcm(3, 5) == 15
    assert lcm(7, 9) == 63
    assert lcm(18, 24) == 72
    assert lcm(10, 15) == 30
    assert lcm(12, 16) == 48
test_lcm()
```

The chat interface on the left provides a detailed explanation of the LCM function code, including its logic and a test function. At the bottom of the chat interface, there is an input field with the text "Ask Jupyter AI" and a send button. Below the input field, there are two checkboxes: "Include selection" (checked) and "Replace selection" (unchecked).

At the bottom of the JupyterLab window, the status bar shows "Simple" mode, a "0" indicator, a "3" indicator, and the text "Python 3 (ipykernel) | Idle".

What's Ollama?

Run LLMs locally, with models such as LLaMa 2, Mistral 7B, Phi, Orca, and many more!

Local web server with REST API, available in a Docker container

<https://ollama.com/blog/ollama-is-now-available-as-an-official-docker-image>

Libraries in Python, Java, C, Rust, Ruby, Langchain, etc.

Multimodal support (Ollama Vision) with LLaVa added for image interrogation, Object detection, text recognition, etc. added 2024/02/02

<https://ollama.ai/blog/vision-models>



Get up and running with large language models, locally.

Run Llama 2, Code Llama, and other models.
Customize and create your own.

Download ↓

Available for macOS & Linux
Windows coming soon

Example Analysis



 Thanks!



nlpfromscratch.com



linkedin.com/in/mylesharrison



youtube.com/@nlpfromscratch