“AI for Everyone: Unleashing the Power of Open Source Tools”

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Learner

Ministry of Education
Government of India
SMART INDIA HACKATHON 2024
Organizers
SBI FOUNDATION
WELCOME
TO
#SIH Software Edition
GRAND FINALE 2024
11th to 12th December
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$whoami

~~(SDE) →~~**Learner**
Innovator : SIH Evaluator, Winner, UIA
Public speaker
Athlete at heart :
🏃‍♀️➡️🏀⚽🏸
Off the grid? Catch me just soaking up **nature** to recharge for the next big idea.

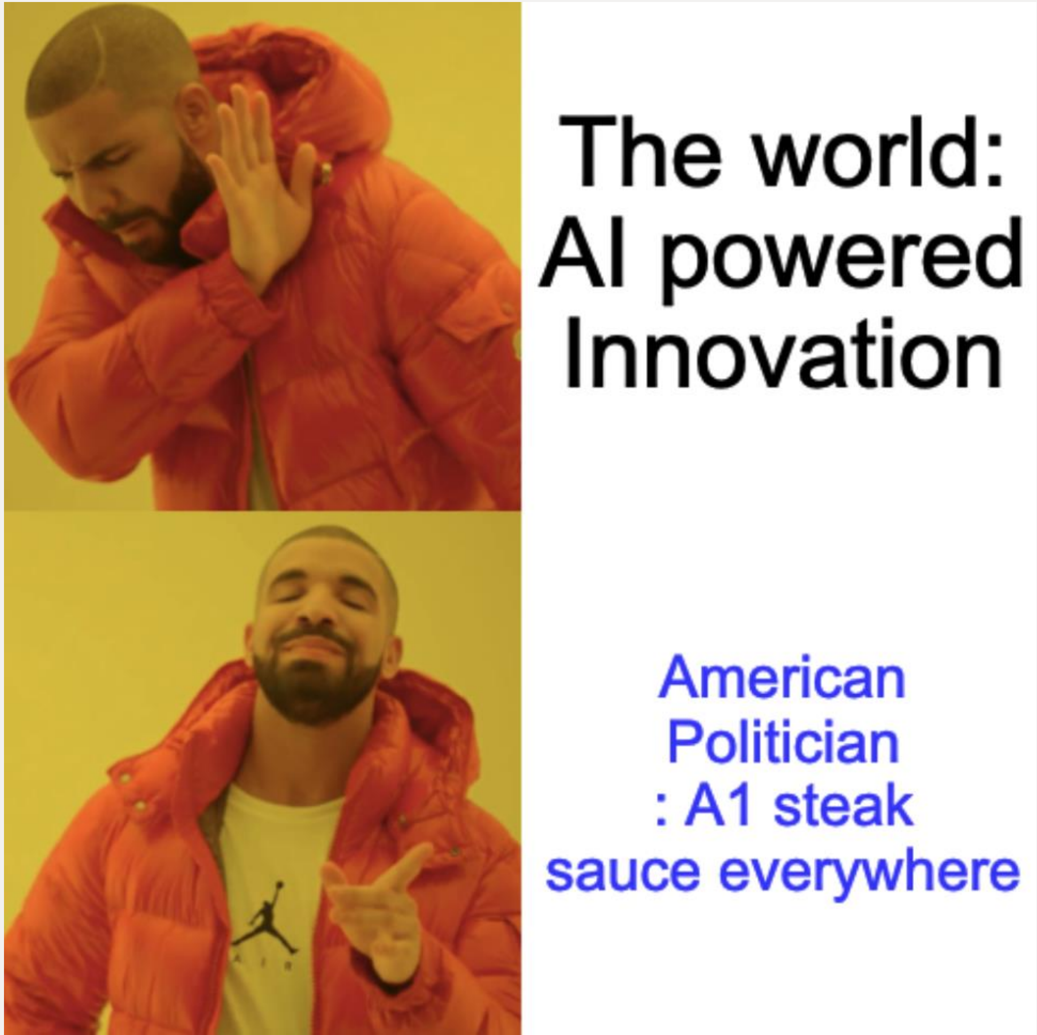
Persistent
#SIH Software Edition
GRAND FINALE 2022

praise me

AGENDA

1. Introduction to yours truly
2. Why the topic
3. Introduction to Open Source AI
4. Demo Time
5. Tips for Getting Started with Open-Source AI
6. How Open Source AI is a game changer ?

Why the topic?

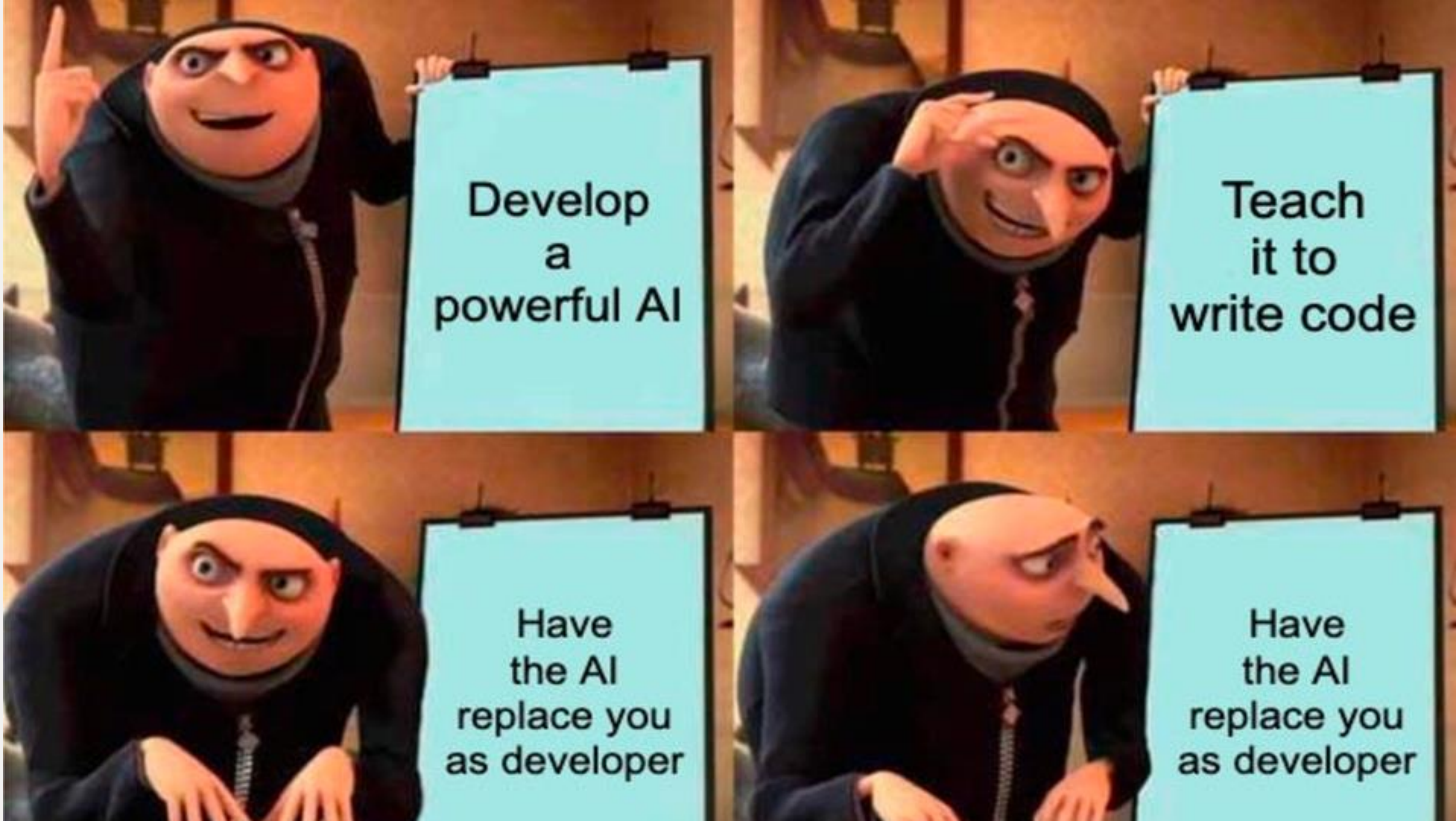

The world: AI powered Innovation
American Politician : A1 steak sauce everywhere

AI is the new electricity. About 100 years ago, electricity transformed every major industry. AI has advanced to the point where it has the power to transform

Andrew Ng
co-founder of Coursera and an adjunct Stanford professor

Modern problems require modern solutions

"What do you think of when you hear AI?"


Develop a powerful AI
Teach it to write code
Have the AI replace you as developer
Have the AI replace you as developer

"What do you think of when you hear 'open-source' AI?"

open-source AI

- **Open-source AI** refers to artificial intelligence technologies, tools, libraries, and frameworks that are **made publicly available for anyone to use, modify, and distribute**.
- Unlike **proprietary AI systems**, where the underlying code and models are **kept closed** and **controlled** by specific companies

Benefits of using open-source AI

- **Accessibility & Transparency** : Open-source projects thrive on collaboration.
- By being publicly available, anyone can contribute to the code, improve algorithms, report bugs, or propose new features -> **Foster Innovation**
- **Cost Effective** : reduces the financial barrier
- **Flexibility and Customization** : easy moldable

Popular open-source AI

Hugging Face

MISTRAL
AI_

OpenCV

TensorFlow

scikit
learn

Open datasets,

Open models,

Open tools

—

that’s how opensource AI has changed the landscape.

Why Pretrained models are a catalyst ?

⏱️ **Save Time** : no need to train from scratch—just fine-tune or use directly.

💸 **Save Resources** : Training from scratch = GPUs + $$$. Pretrained = run on laptop or free tier cloud

🔌 **Easy to Plug Into Apps** : Most are available via APIs or model hubs with one-liners.

🤝 **Community-Supported & Open Source** : You benefit from updates, benchmarks, and shared knowledge.(win :win)

⚡ **Rapid Prototyping** : Go from idea to working app fast.

Goal is to **Focus on Innovation, Not Reinvention**

Why Low-Code in Open Source Matters

✅ **Accessible**: Anyone with basic scripting skills or even no-code platforms can use it.

🚀 **Faster Prototyping**: Build AI apps in hours, not weeks. Pretrained models drastically reduces training time

💰 **Cost-Effective**: No need to hire full ML teams—just plug and play.

🤝 **Community-Driven**: Tons of examples, templates, and support from the open source community.

Local anecdotes to understand impact of AI

1. **AI in Healthcare: Enhancing Decision-Making**

Dr. Erik faces a tough decision: should a patient who just had a cardiac arrest undergo a risky treatment?

With just a few clicks, he uses an AI-powered tool developed at the University of Gothenburg. It compares the patient’s data to thousands of previous cases, giving Erik clear, data-backed guidance.

For him, it’s not just about tech—it’s about saving lives with confidence.

Local anecdotes to understand impact of AI

2. 🚶‍♀️**Safer Streets for All**

Fatima, an older woman who uses a walker, heads out to visit her grandchildren.
Her phone vibrates: “Steep curb ahead.”

The alert comes from an AI app developed in Gothenburg that helps people with reduced mobility navigate urban environments.

It reads traffic patterns, sidewalk conditions, and user data—keeping Fatima safer, step by step.

Remember, We want the system to adapt to different needs and situations Therefore, it is important that we include people from different life conditions in the project

SCAN ME

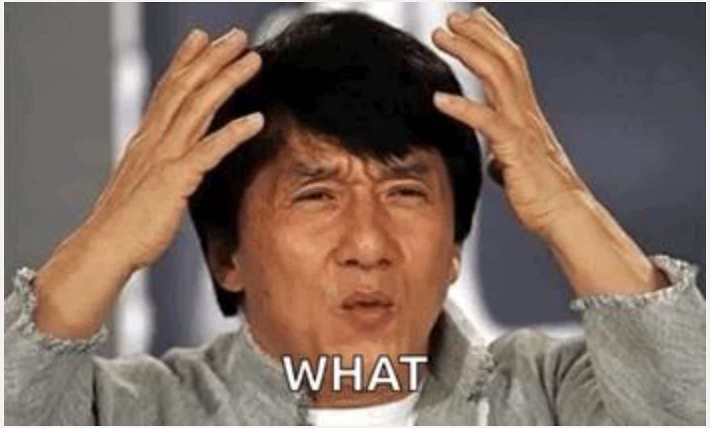
Local anecdotes to understand impact of AI

👮 AI in Law Enforcement: Facial Recognition Technology

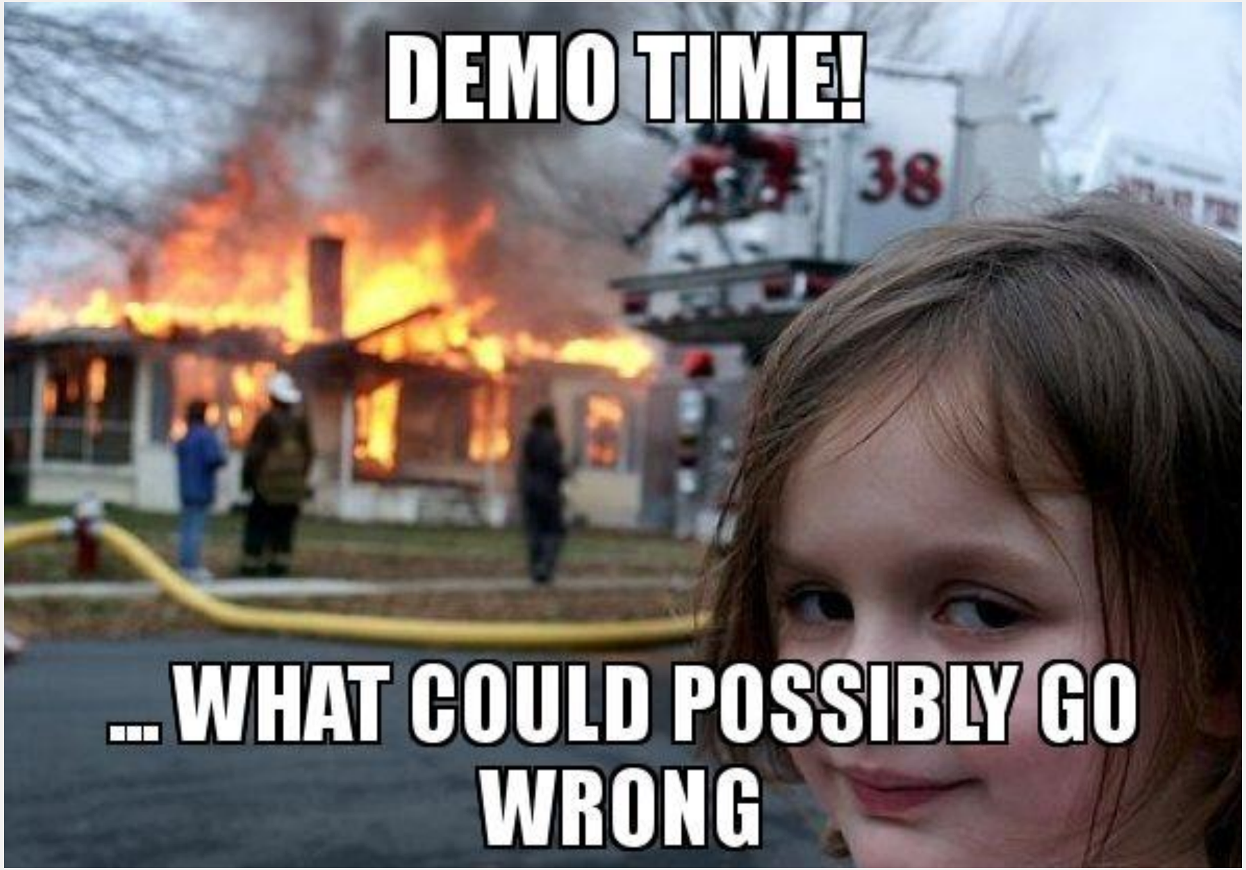
The Swedish government has proposed legislation allowing police to use AI-powered facial recognition to combat serious crimes such as human trafficking and murder, bolstering public safety.

💳 BankID: AI in Your Pocket

BankID, Sweden's electronic identification system, boasts a 94% usage rate among smartphone users. Developed by multiple Swedish banks, it facilitates secure online transactions and access to various services, exemplifying AI's role in streamlining financial operations.

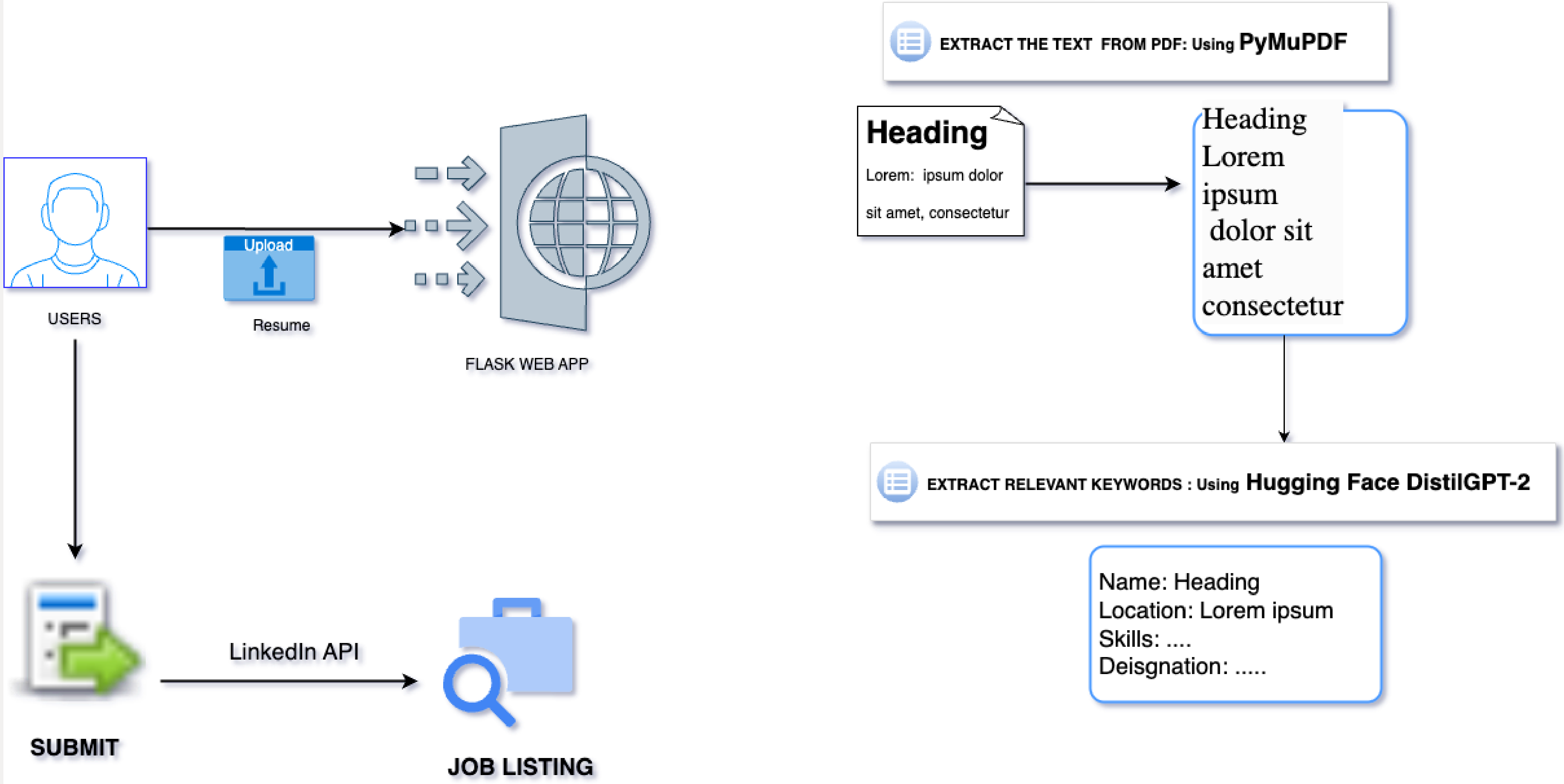

WHAT

HOW?


DEMO TIME!
...WHAT COULD POSSIBLY GO WRONG
38

Wish me luck

Resume Parser + Job Search using Open Source AI



USERS
Upload
Resume
FLASK WEB APP
SUBMIT
LinkedIn API
JOB LISTING

EXTRACT THE TEXT FROM PDF: Using PyMuPDF

Heading

Lorem: ipsum dolor

sit amet, consectetur

Heading
Lorem
ipsum
dolor sit
amet
consectetur

EXTRACT RELEVANT KEYWORDS : Using Hugging Face DistilGPT-2

Name: Heading
Location: Lorem ipsum
Skills: ....
Deisgnation: .....

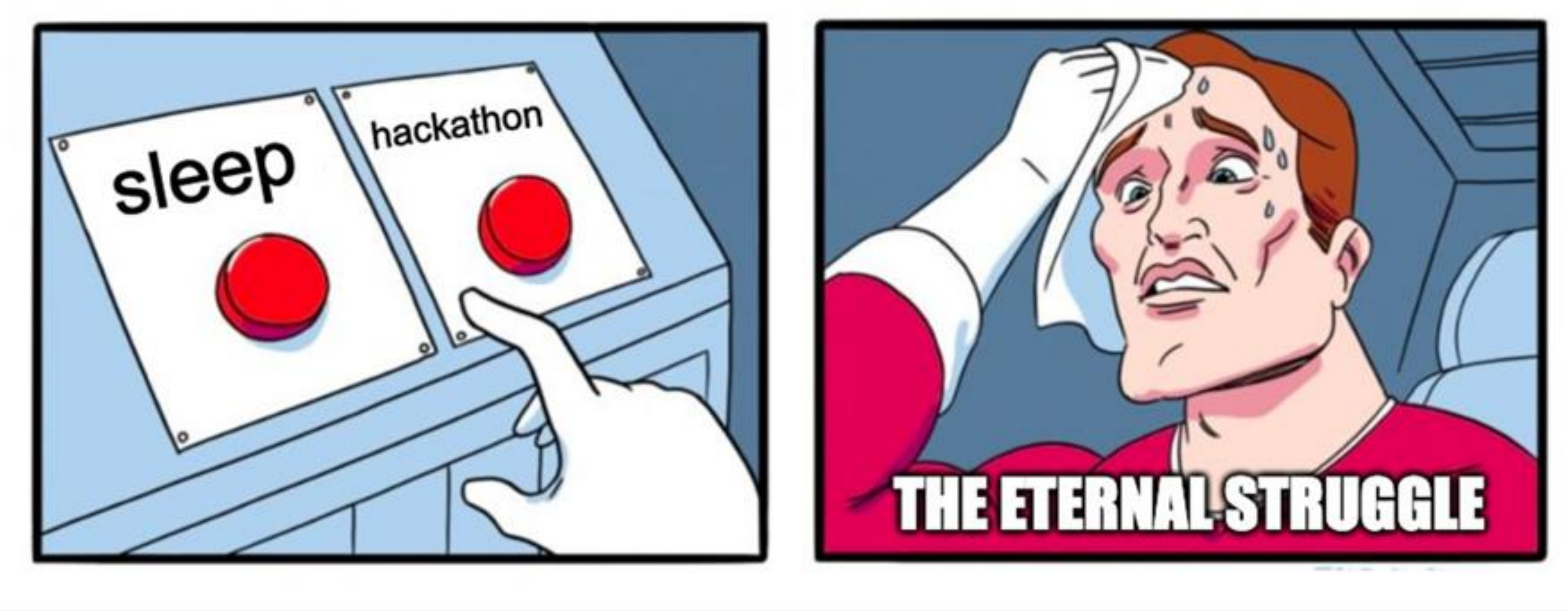
How Open Source AI is a game changer ? :
Hack the clock

What are Hackathons?

RUNNING WHILE HACKING
"HACKATHON"
imgflip.com

What are Hackathons?

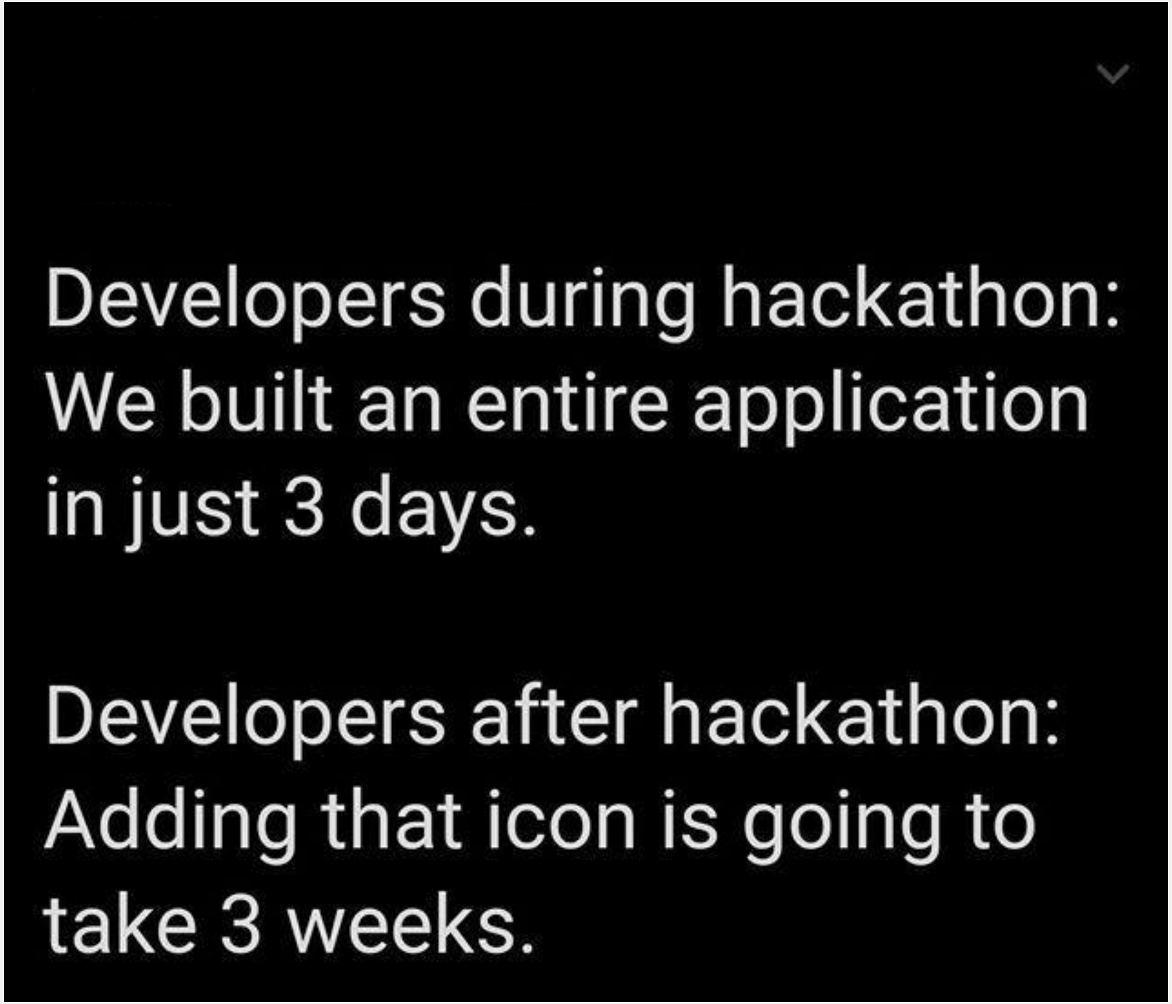
- Hackathon is **time bound event** where people collaborate to develop **innovative solutions** to **specific problems or challenges**
- Learn a new skill and technology
- You collaborate with like minded people
- Enhance your problem solving capabilities


sleep
hackathon
THE ETERNAL STRUGGLE

How Open Source AI is a game changer ?

- **Time** is essence in hackathons: **Avoid Reinventing the Wheel**
- **Focus on Rapid Prototyping**
- Leverage use of **Pretrained models, samples, templates**
- Master the ART of **Get the right tool for the right work**
- **Community Support and Collaboration**: Open-source projects foster collaboration, (Reddit, FOSS, GitHub, Stack Overflow)
- **Cost Efficiency:** No Licensing Fees
- **Make Scalable and Flexible** Hackathon Solution: Since open-source tools allow you to modify the code, you have the flexibility

The TRUTH!!



Developers during hackathon:
We built an entire application in just 3 days.

Developers after hackathon:
Adding that icon is going to take 3 weeks.

Smart India Hackathon Winner

Tips for Getting Started with Open-Source AI

- **Start small**: Use pre-trained models and low code no code strategies
- **Leverage the community**: Participate in open-source forums and communities.
- **Participate** in Hackathons, Project presentations,Seminars
- Use online resources (tutorials, courses, and documentation) to learn.
- Pro Tip : coding one line at a time.

Get the Slides

SCAN ME

Connect with me 🙋🏻‍♀️

Future References

Mistral AI

Granite

Open CV

Hugging Face API

Thank you foss-north !!!

SMILE
TOMORROW
WILL BE
WORSE

Free Software
Free Society
Sakshi
Nasha
Cohesity
Speaker
https://foss-north.se

Thank you for being an amazing audience

That’s how I want the hall to look like

tills nästa gång