



NATIONAL UNIVERSITY
of Computer & Emerging Sciences



Generative AI for Everyone

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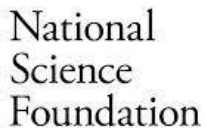
Professor and Dean

FAST NUCES

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SYSLAB (My Research Group at FAST-NUCES)

- Systems Research Laboratory
 - Developing Capable Systems through integration
 - Artificial Intelligence
 - Cloud Computing
 - Security
 - High Performance Computing
 - Health
 - Education



What is Generative AI



Generate new Context

Text
Images
Documents
Videos



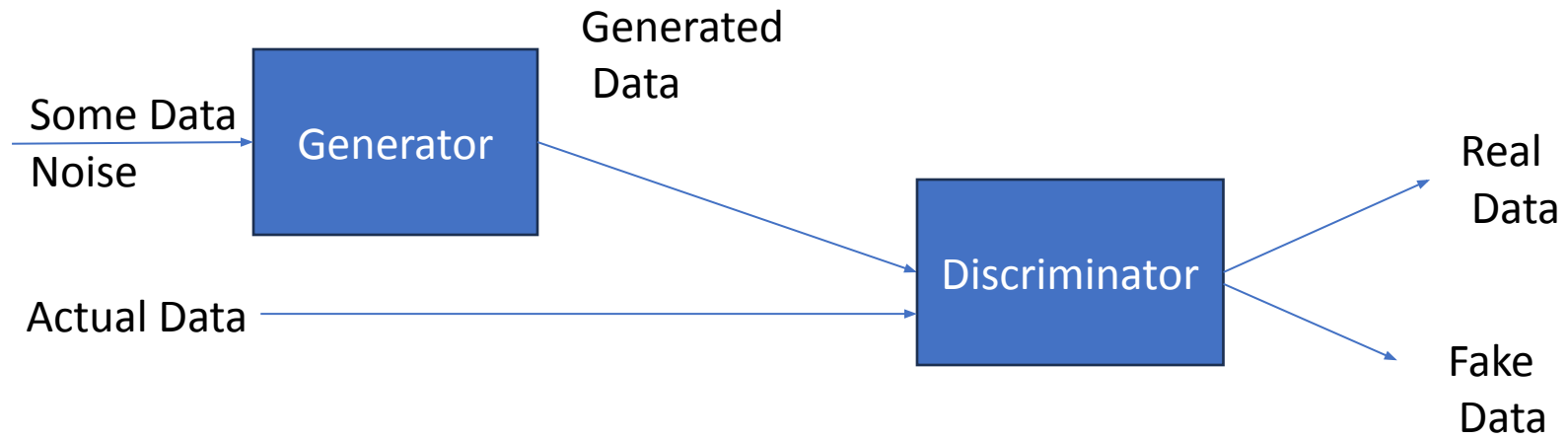
How?

GenAI

GANs (Generative Adversarial Networks)

Generative Pre-Trained Transformers (GPT)

GANs



GPT

Language Models

Trained to predict the next word in a sentence:

The cat is chasing the _____



dog 5%

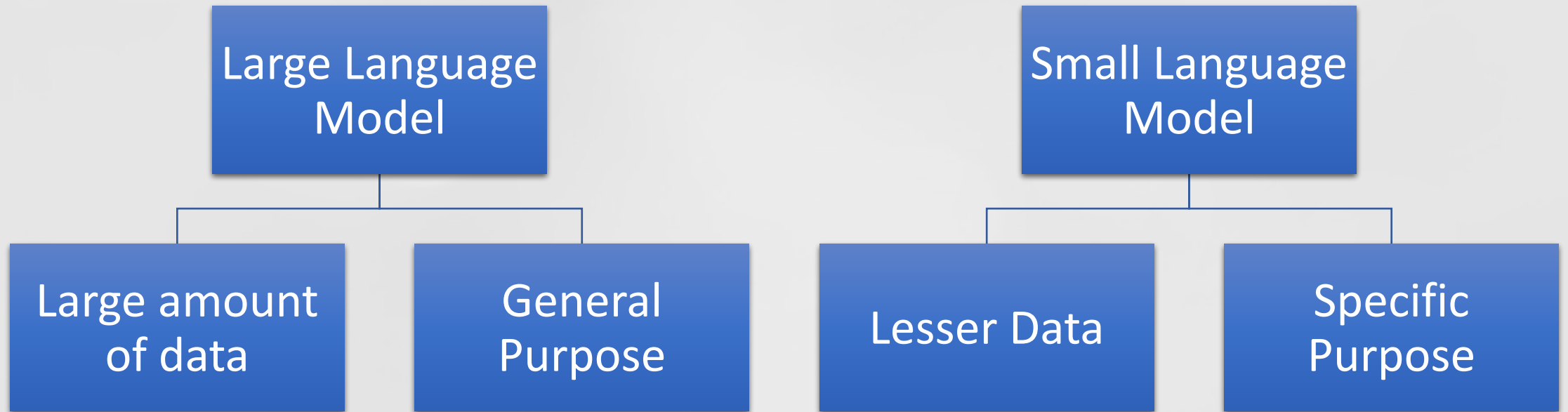
mouse 70%

squirrel 20%

boy 5%

house 0%

Language Model



Prompt Engineering



Structuring Text



Understood by Language Models

This workshop (GenAI) for



OFFICE WORK



SOFTWARE ENGINEERS /
DEVELOPERS



STUDENTS AND TEACHERS

GenAI for Office Work



Emails



Documents



Images



Audio



Video

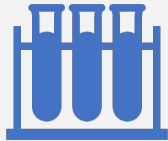


3D

Software Engineering



CODE



TESTING



IMPROVEMENT



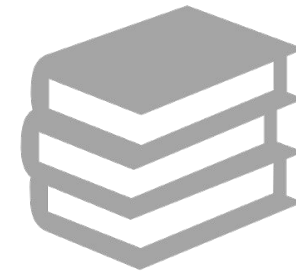
UNDERSTANDING

Students and Teachers



Teachers

Grading



Students

Research Papers

Essays

Generative AI for Office Work



Audio Generation



Text to Speech

Ttsmaker.com

Gen AI for Students



Students

- Write an essay/Email
 - Bing (Co-Pilot)
 - ChatGPT
 - Jenni.ai
-

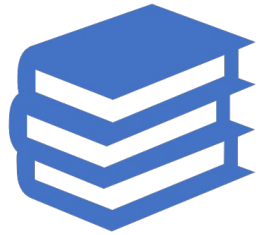
Jenni.ai



CREATE DOCUMENTS



LINE BY LINE REVIEWING



Articles and Research Papers



Humata.ai



Upload Documents



Ask Questions

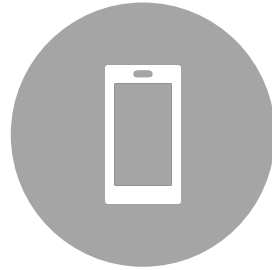
Gen AI for Teachers

Gen AI for Office Work

Gen AI for Teachers



GRADING



CONTENT
GENERATION



QUESTION
GENERATION



SOLUTION
GENERATION



Image Creator

<https://www.bing.com/images/create>



Other Tools for Image Creation

starrtAI

Gab AI

playground

night cafe

mage space

wombo dream



3D animation

<https://openai.com/research/point-e>



Music

Musiclm.com by Google Research





Videos

[Ai.invideo.io](https://ai.invideo.io)

Clone your audio or create a new one





Videos

Kapwing.com

Create a new video



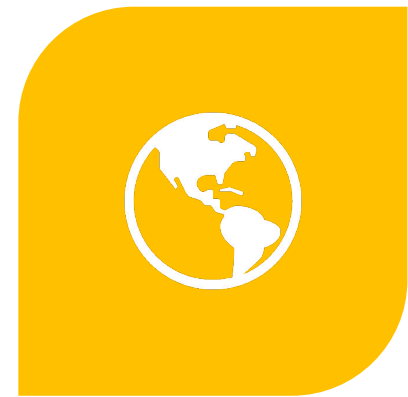
Videos



REFACE (MOBILE APP)



DEEP FACE LAB



SWAPFACE.ORG

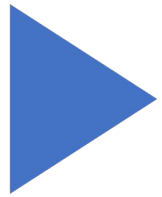


Voice Cloning

Evenlabs.io

Synthesia.io

Resemble.io



Slides

Gamma App



Webpage



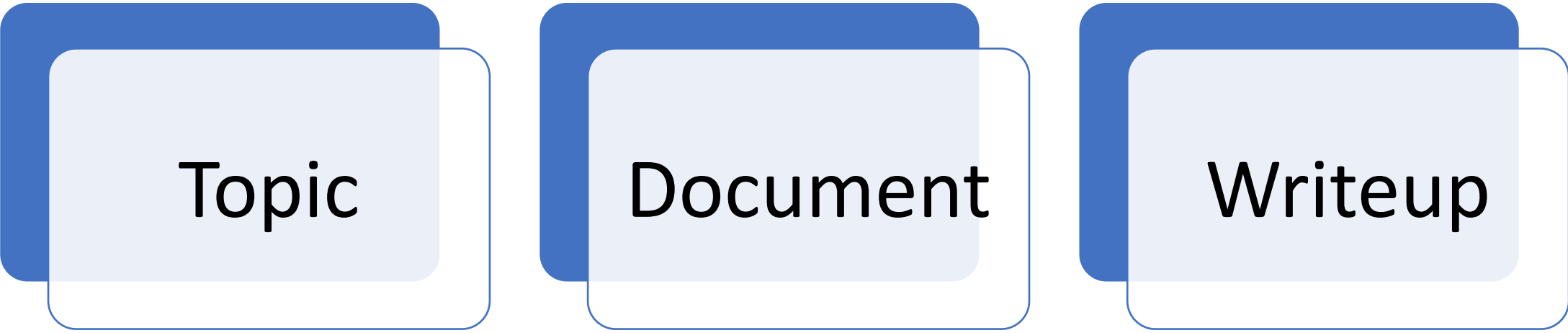
Document



Presentation



Input



Topic

Document

Writeup

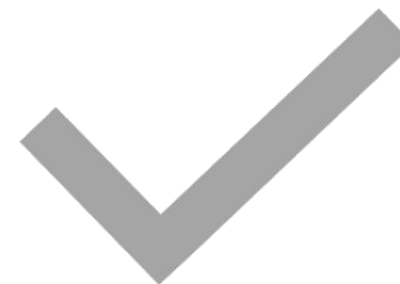
Prompting



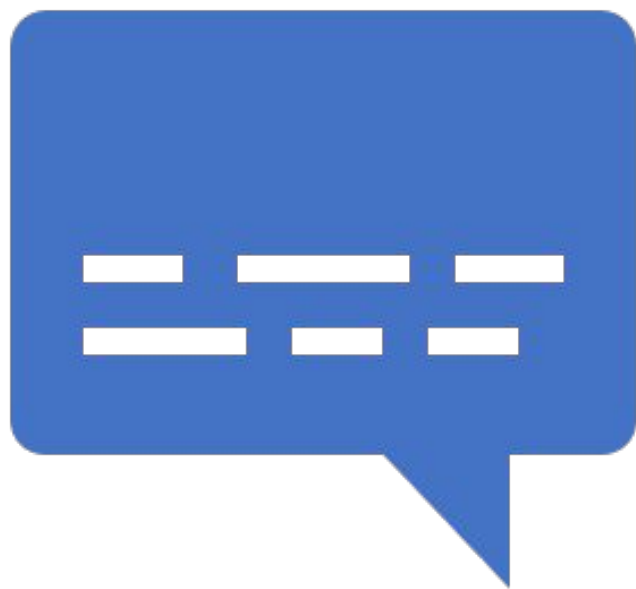
Perplexity.ai



Generate Prompt
responses



Select sources



Instagram Caption
generator

Mention.com

1

Select Topic

2

Set tone

3

Create post

4

Monitor
responses

Copy.ai

Gen AI for Developers

Developers



Code
Generation



Webpage
Generation



Logo
Generation



Code Testing



Code
Explanation



Code
Refactoring



Code Generation

Zzzcode.ai



Prompt based Code Generation



Language Selection

Other Uses

Bug	Bug Detection
Refactoring	Code Refactoring
Code	Code Explanation

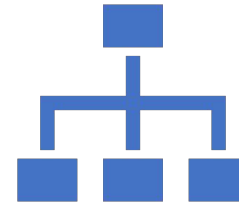
What is Code Refactoring



Improves the quality of
code



Code is functioning
properly



Improves Structure

Try an Example

- [Zzzcode.ai](#)

What is Unit Testing



Unit

Smallest possible part of
code



Testing Small Units

Identify Bugs



Automation



Repetition



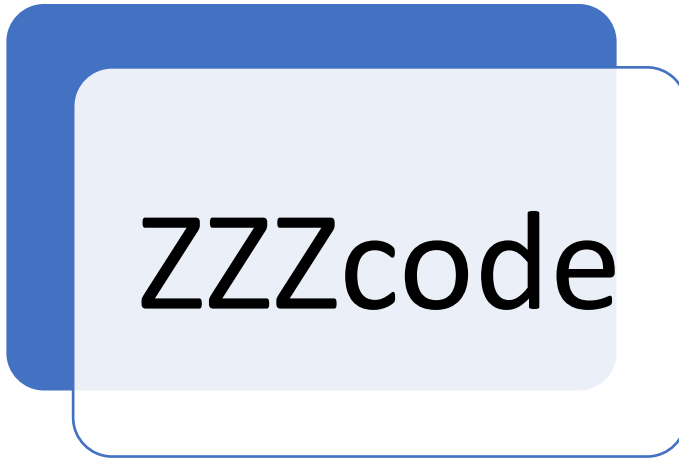
Early Detection



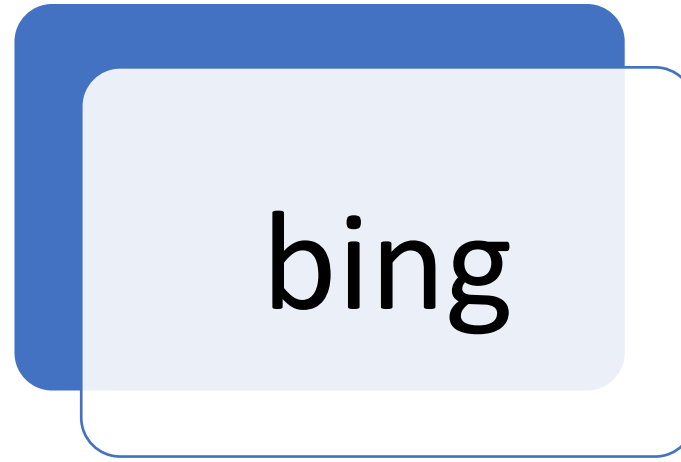
Try an Example



ChatGPT



ZZZcode



bing

Webpage Generation

- <https://snappy.appypie.com>

Conclusion



Emerging Topics



Improvement



Challenges
