

# 오픈소스를 통한 수식인식 및 이미지생성

```
18 REACT_PROFILE_TYPE;  
19 REACT_PROVIDER_TYPE;  
20 REACT_PROVIDER_MODE_TYPE;  
21 REACT_STRICT_MODE_TYPE;  
22 REACT_SUSPENSE_TYPE;  
23 } from 'shared/ReactSymbols';  
24 import isValidElementType from 'shared/isValidElementType';  
25  
26 export function typeOf(object: any) {  
27   if (typeof object === 'object' && object !== null) {  
28     const $$typeof = object.$$typeof;  
29     switch ($$typeof) {  
30       case REACT_ELEMENT_TYPE:  
31         const type = object.type;  
32  
33         switch (type) {  
34           case REACT_FRAGMENT_TYPE:  
35             case REACT_PROFILER_TYPE:  
36             case REACT_STRICT_MODE_TYPE:  
37             case REACT_SUSPENSE_TYPE:  
38               return type;  
39           default:  
40             const $$typeofType = type && type.$$typeof;  
41  
42             switch ($$typeofType) {  
43               case REACT_CONTEXT_TYPE:  
               case REACT_FORWARD_REF_TYPE:  
               case REACT_LAZY_TYPE:
```



# 목차

**01**

▪ (개요)

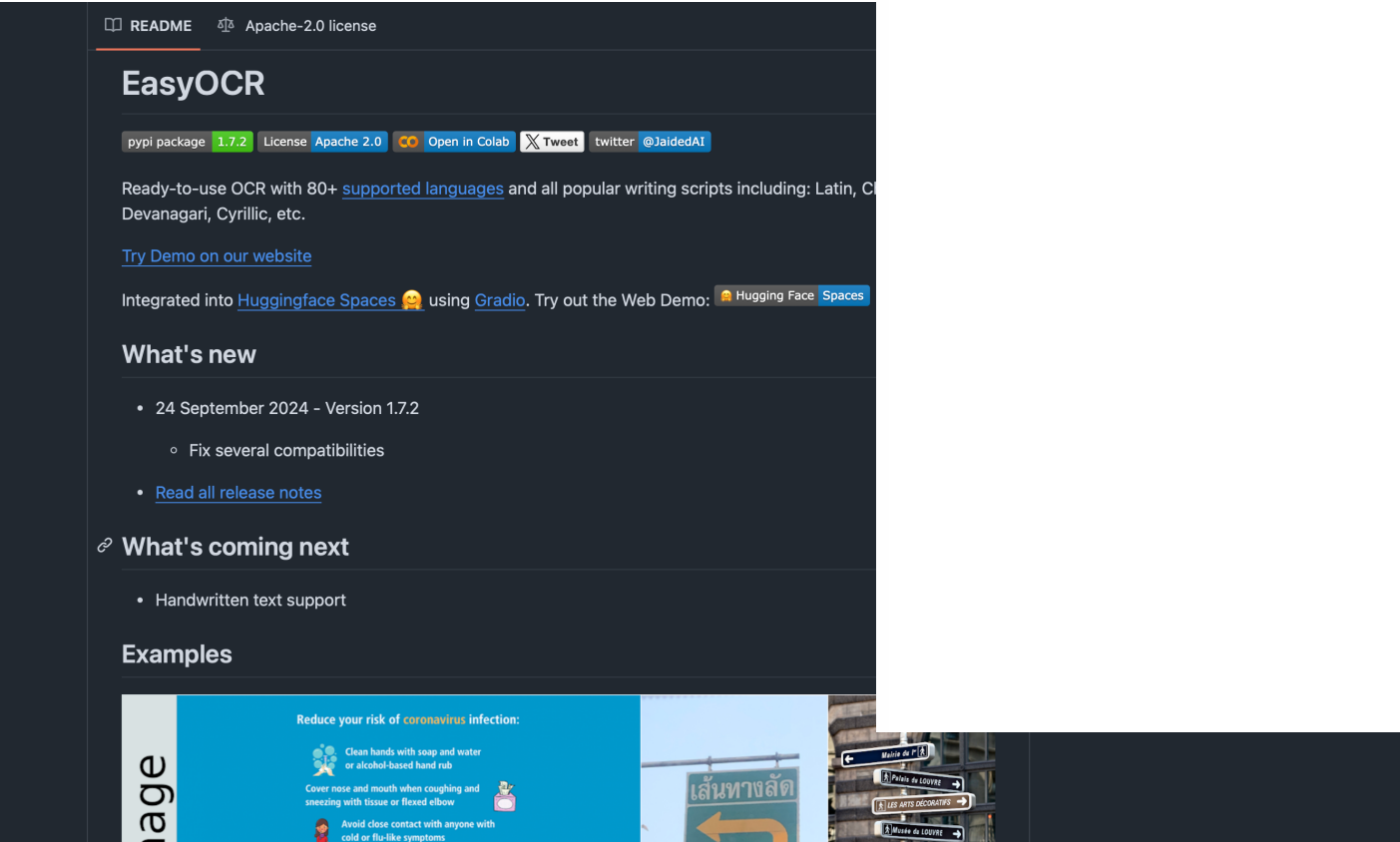
**02**

▪ 제작과정

**03**

▪ 문제점 및 개선방안

- OCR 오픈소스(EasyOCR)
  - 네이버 Clovaai의 CRAFT, deep-text-recognition benchmark을 기반으로 만든 오픈 소스 라이브러리
  - 텍스트 감지 후 문자 인식 수행



Models   GitHub   Discord   Docs   Cloud

🔍 Search models

Cloud

Embedding

Vision

Tools

Thinking

Popular



## gpt-oss

OpenAI's open-weight models designed for powerful reasoning, agentic tasks, and versatile developer use cases.

tools

thinking

cloud

20b

120b

↓ 4.6M Pulls   5 Tags   Updated 1 month ago

## qwen3-vl

The most powerful vision-language model in the Qwen model family to date.

vision

tools

cloud

2b

4b

8b

30b

32b

235b

↓ 386.4K Pulls   59 Tags   Updated 2 weeks ago

## deepseek-r1

DeepSeek-R1 is a family of open reasoning models with performance approaching that of leading models, such as O3 and Gemini 2.5 Pro.

tools

thinking

1.5b

7b

8b

14b

32b

70b

671b

↓ 71.4M Pulls   35 Tags   Updated 4 months ago

README MIT license

# Whisper

[\[Blog\]](#) [\[Paper\]](#) [\[Model card\]](#) [\[Colab example\]](#)

Whisper is a general-purpose speech recognition model. It is trained on a large dataset of diverse audio and is also a multitasking model that can perform multilingual speech recognition, speech translation, and language identification.

## Approach

### Multitask training data (680k hours)

#### English transcription

“Ask not what your country can do for ...”  
Ask not what your country can do for ...

#### Any-to-English speech translation

“El rápido zorro marrón salta sobre ...”  
The quick brown fox jumps over ...

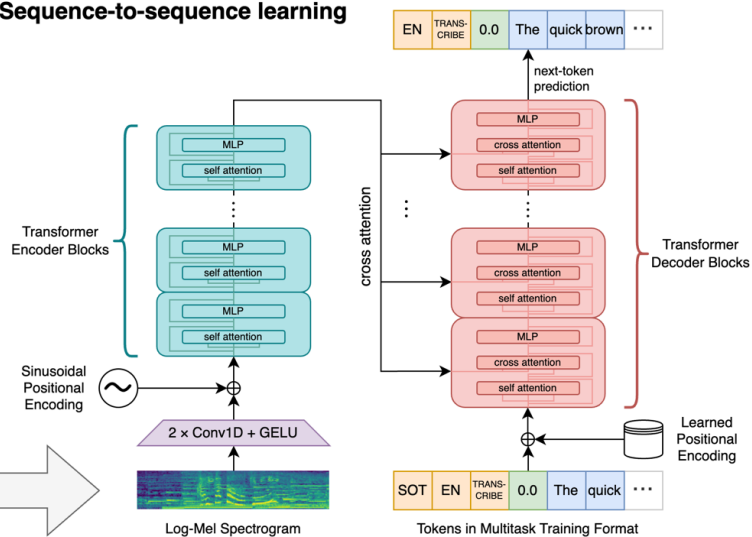
#### Non-English transcription

“언덕 위에 올라 내려다보면 너무나 넓고 넓은 ...”  
언덕 위에 올라 내려다보면 너무나 넓고 넓은 ...

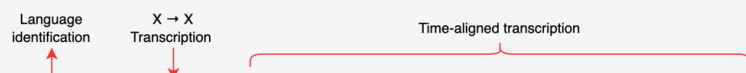
#### No speech

(background music playing)  
🔊

### Sequence-to-sequence learning



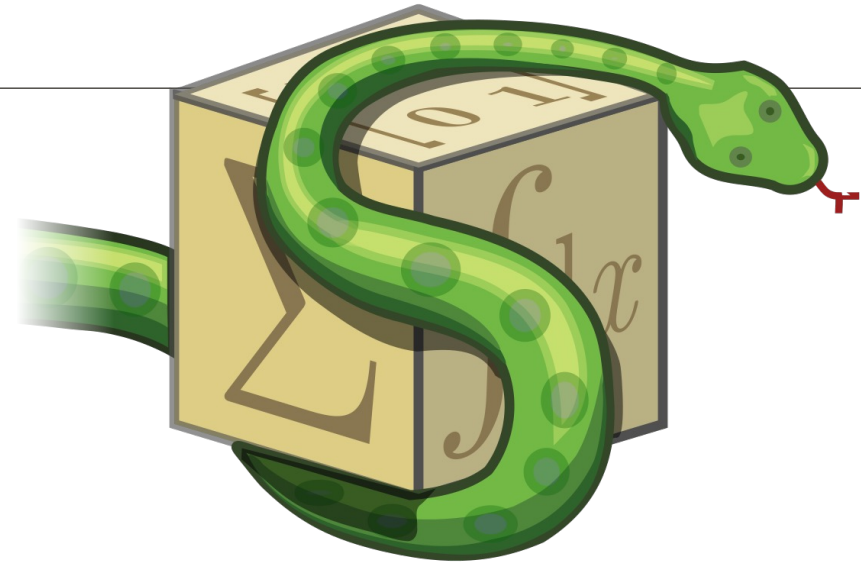
### Multitask training format



- Whisper(자동음성인식모델)
- OpenAI에서 개발한 자동음성인식(Automatic Speech Recognition, ASR)모델
- 680,000시간 분량의 다국적-다목적 언어 데이터 학습



*NumPy*



SymPy

*matplotlib*



# BSD



# NumPy matplotlib



## idejie/Pix2Tex

An Android application for transforming picture to Latex



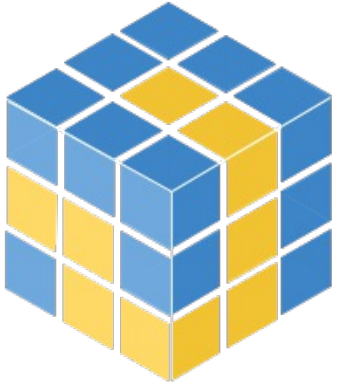
1 Contributor

0 Issues

0 Stars

1 Fork

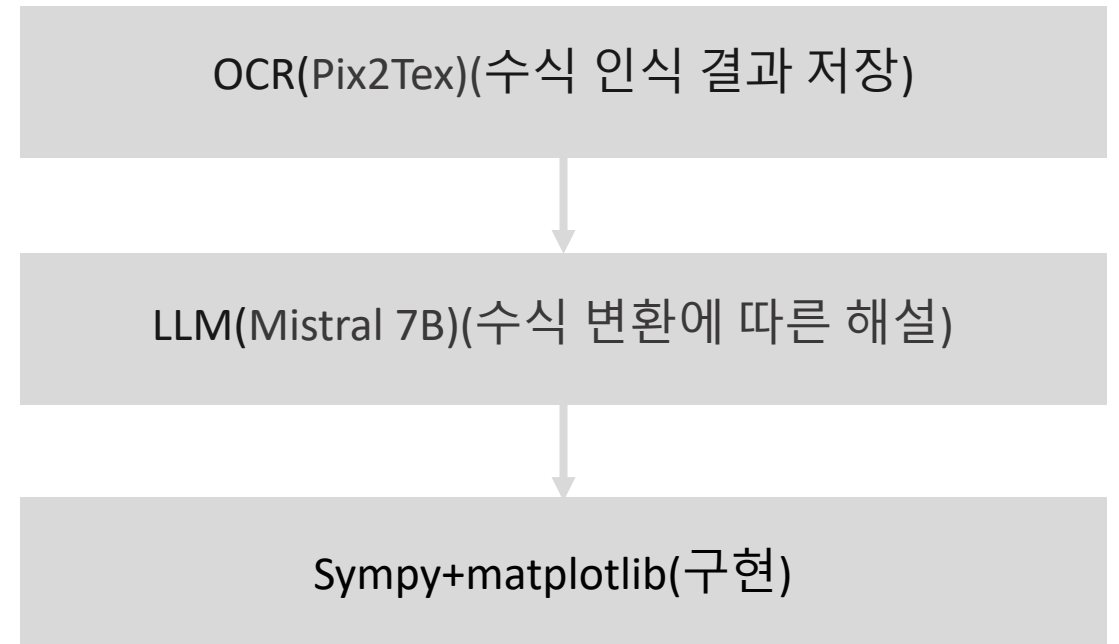




***NumPy***

1.26.4(<-> 2.2.6)

--no-deps





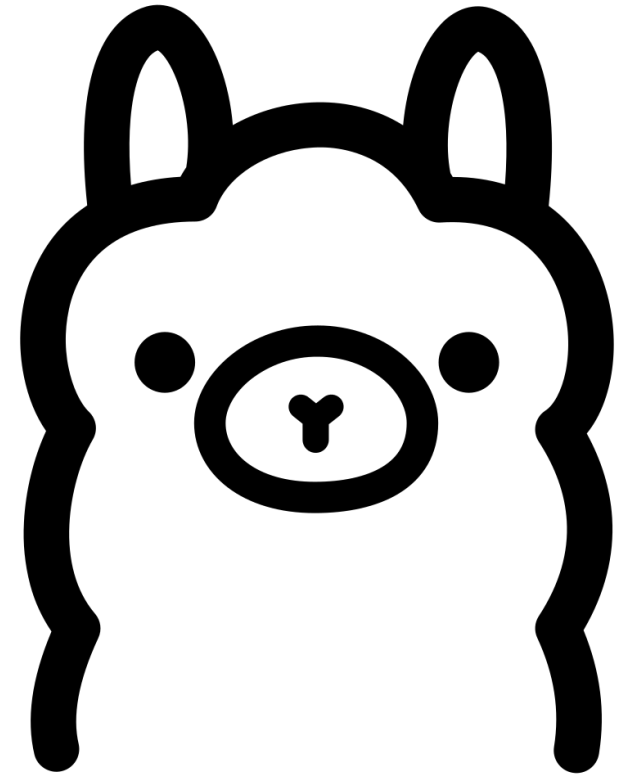
## JaiedAI/EasyOCR

Ready-to-use OCR with 80+ supported languages and all popular writing scripts including Latin, Chinese, Arabic, Devanagari, Cyrillic and etc.

Jaied  
AI

113 Contributors  
17k Used by  
74 Discussions  
29k Stars  
4k Forks

 **OpenAI**  
**Whisper** 



**gpt-oss**

OpenAI's open-weight models designed for powerful reasoning, agentic tasks, and versatile developer use cases.

tools thinking cloud 20b 120b

↓ 5.1M Pulls    ↗ 5 Tags    ⌚ Updated 2 months ago

**qwen3-vl**

The most powerful vision-language model in the Qwen model family to date.

vision tools cloud 2b 4b 8b 30b 32b 235b

↓ 701.4K Pulls    ↗ 59 Tags    ⌚ Updated 1 month ago

**ministral-3**

The Ministral 3 family is designed for edge deployment, capable of running on a wide range of hardware.

vision tools cloud 3b 8b 14b

↓ 76K Pulls    ↗ 16 Tags    ⌚ Updated yesterday

**deepseek-r1**

DeepSeek-R1 is a family of open reasoning models with performance approaching that of leading models, such as O3 and Gemini 2.5 Pro.

tools thinking 1.5b 7b 8b 14b 32b 70b 671b

↓ 74M Pulls    ↗ 35 Tags    ⌚ Updated 5 months ago

**qwen3-coder**

Alibaba's performant long context models for agentic and coding tasks.

tools cloud 30b 480b

↓ 1.1M Pulls    ↗ 10 Tags    ⌚ Updated 2 months ago

**gemma3**

The current, most capable model that runs on a single GPU.

vision cloud 270m 1b 4b 12b 27b

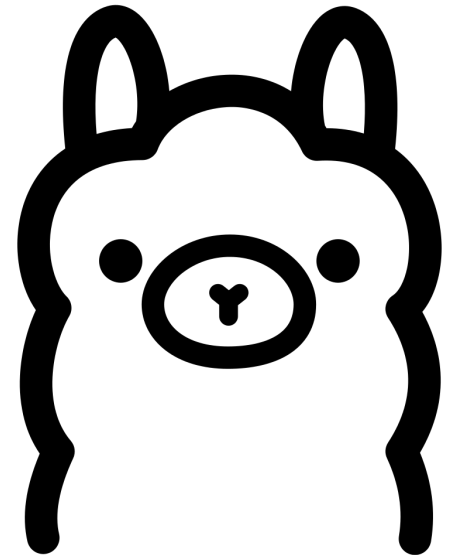
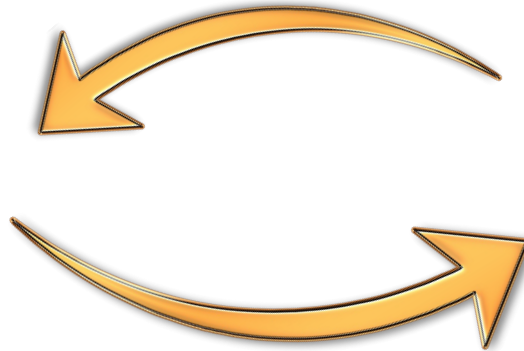
↓ 27.9M Pulls    ↗ 29 Tags    ⌚ Updated 5 days ago

**glm-4.6**

Advanced agentic, reasoning and coding capabilities.

cloud

↓ 31K Pulls    ↗ 1 Tag    ⌚ Updated 1 month ago



OCR(easy ocr)(수식 인식 결과 저장)

Whisper(음성 인식 결과 저장)

LLM(두 값을 바탕으로 수정 및 코드 생성)

Sympy+matplotlib(구현)

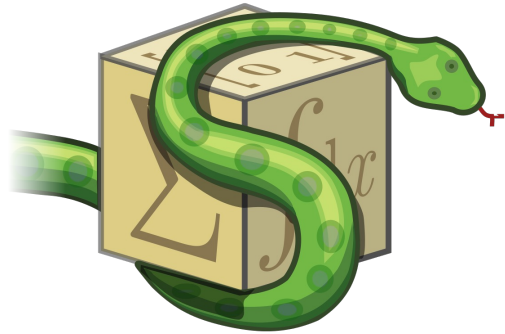


OCR(Pix2Tex)(수식 인식 결과 저장)

LLM(Mistral 7B)(수식 변환에 따른 해설)

Sympy+matplotlib(구현)

$$\frac{d}{dx}(x \sin x + \cos x)$$



SymPy

idejie/**Pix2Tex**

An Android application for transforming picture to  
Latex



1

Contributor

0

Issues

0

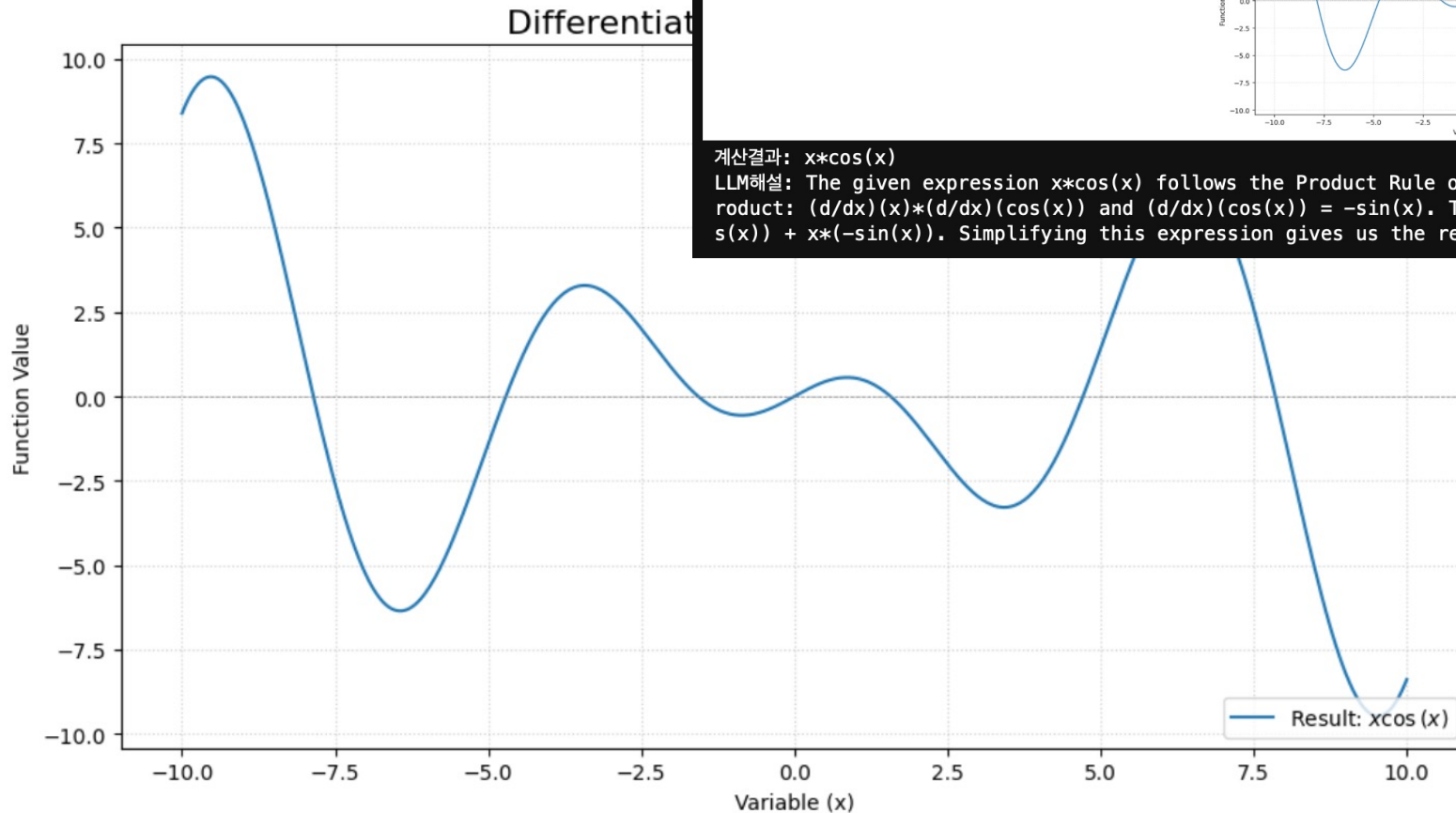
Stars

1

Fork

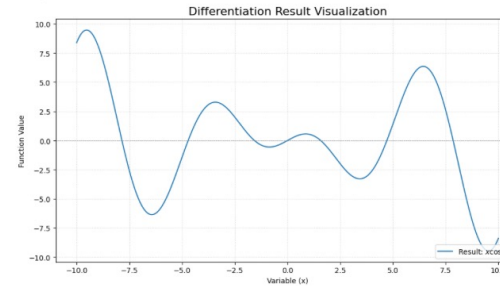


matplotlib



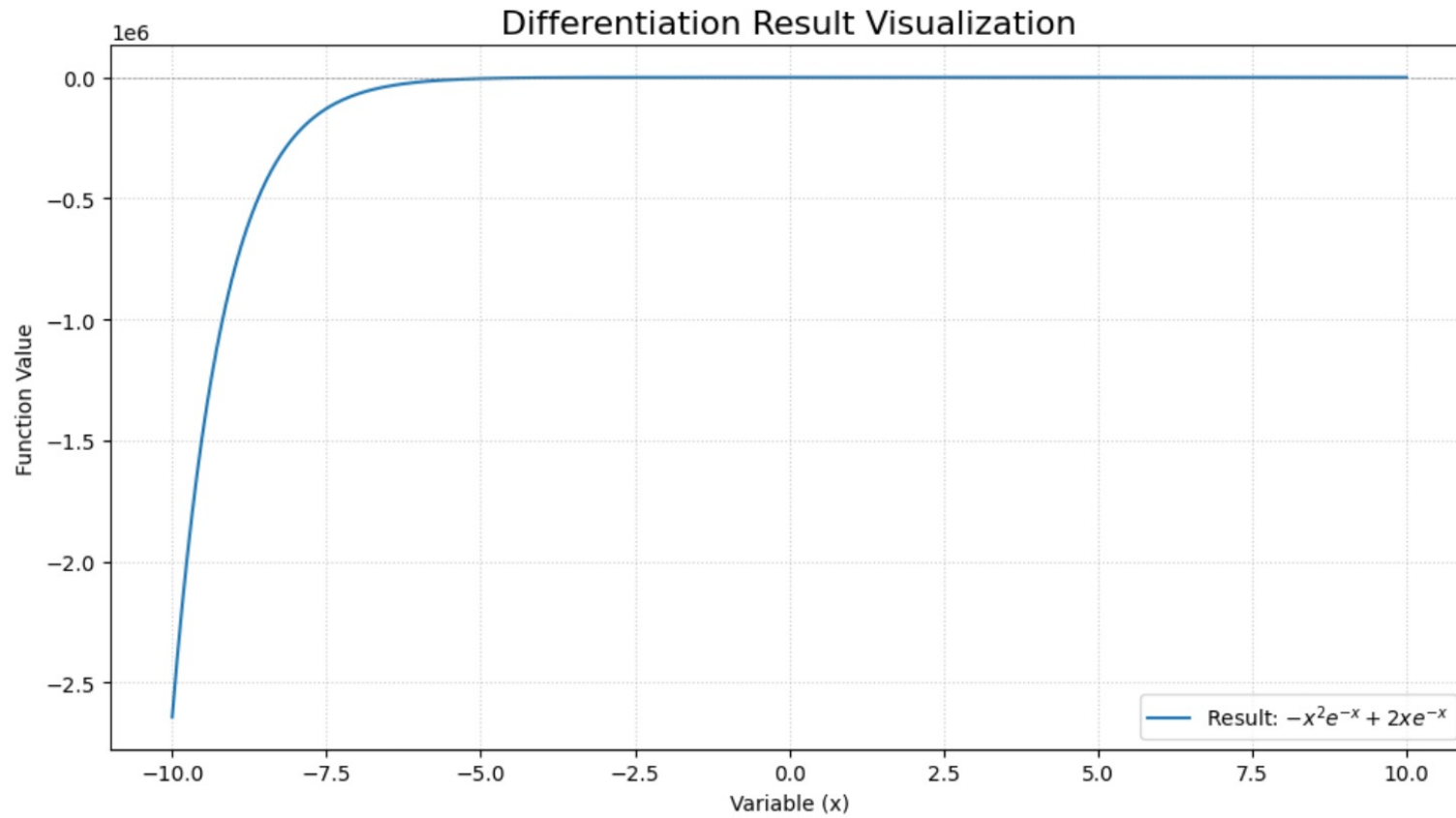
계산결과:  $x*\cos(x)$

LLM해설: The given expression  $x*\cos(x)$  follows the Product Rule of differentiation, where we apply the rule to each term in the product:  $(d/dx)(x)*(d/dx)(\cos(x))$  and  $(d/dx)(\cos(x)) = -\sin(x)$ . Therefore, the derivative of  $x*\cos(x)$  is:  $d/dx(x*\cos(x)) = 1*(\cos(x)) + x*(-\sin(x))$ . Simplifying this expression gives us the resulting function as:  $d/dx(x*\cos(x)) = \cos(x) - x*\sin(x)$ .



계산결과:  $x*\cos(x)$

LLM해설: The given expression  $x*\cos(x)$  follows the Product Rule of differentiation, where we apply the rule to each term in the product:  $(d/dx)(x)*(d/dx)(\cos(x))$  and  $(d/dx)(\cos(x)) = -\sin(x)$ . Therefore, the derivative of  $x*\cos(x)$  is:  $d/dx(x*\cos(x)) = 1*(\cos(x)) + x*(-\sin(x))$ . Simplifying this expression gives us the resulting function as:  $d/dx(x*\cos(x)) = \cos(x) - x*\sin(x)$ .



$$\frac{d}{dx} (x^2 e^{-x})$$



$$e^{-x} (2x - x^2)$$

