



# Generative AI

**Person:** That sounds cool. Can you tell me a joke?

**Chatbot:** Sure! Why don't scientists trust atoms?  
Because they make up everything!

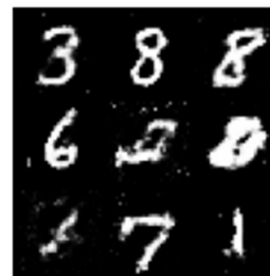
**Person:** Haha, that's a good one! Now, can you help me with a math problem?

**Chatbot:** Of course! Feel free to tell me the math problem, and I'll do my best to help you solve it.

**Person:** What's the square root of 144?

**Chatbot:** The square root of 144 is 12.

**Person:** Thanks! Also, I'm planning a trip to Paris. Do you have any travel tips?



# Fernando Amaral





Supplementary  
materials



# Non-automatic subtitles!

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# What We Will Study!

1. Introduction

2. Fundamentals of ANN

3. Getting to Know Transformers

4. Text Generation, Fill the Mask and QEA

5. Summarization, Translation and Chatbot

6. Prompt Engineering for Image Generation

7. Getting to know GANs

8. Image Generation with GANs

9. Getting to Know Diffusers

10. Auto-Image Generation

11. High Quality and Conditional Image Generation

12. Other pre-trained Image Generation Models

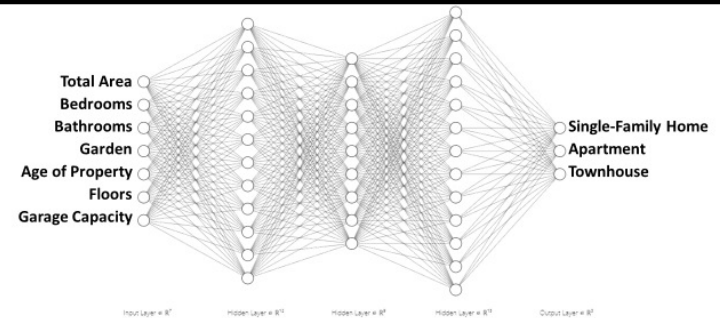
13. More Advanced Features

14. Audio and Video Generation

15. Real world Application I Chatbot

16. Real World Application II Image Producer

## What is The Objective of an ANN?



Given an input, produce the desired output.



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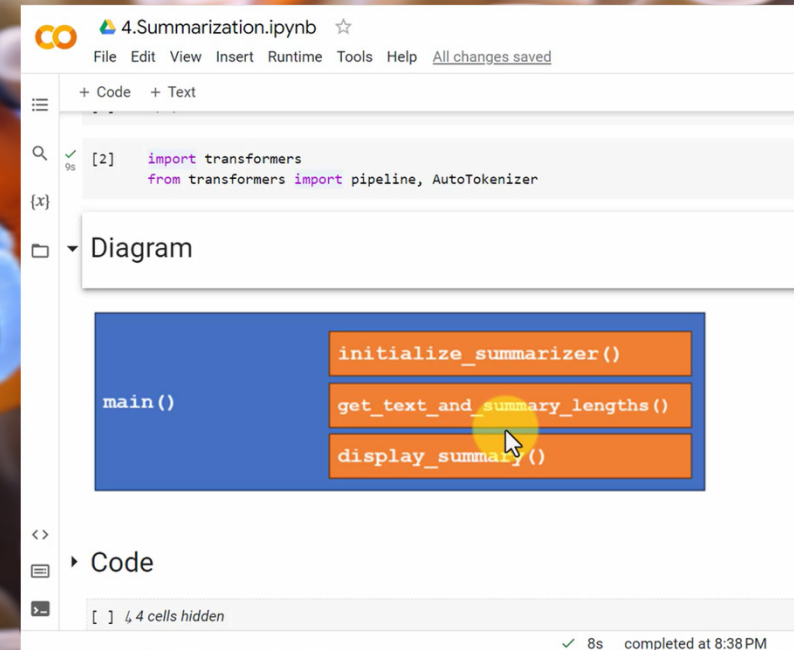
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The screenshot shows a Jupyter Notebook titled "4.Summarization.ipynb". The code cell contains the following Python code:

```
[2] import transformers
    from transformers import pipeline, AutoTokenizer
```

Below the code cell is a diagram showing a function call structure. A blue box labeled "main()" contains three orange boxes stacked vertically, representing function calls: "initialize\_summarizer()", "get\_text\_and\_summary\_lengths()", and "display\_summary()". A yellow circle highlights the "display\_summary()" call, with a mouse cursor pointing at it.

At the bottom of the notebook interface, it shows "4 cells hidden" and "8s completed at 8:38 PM".

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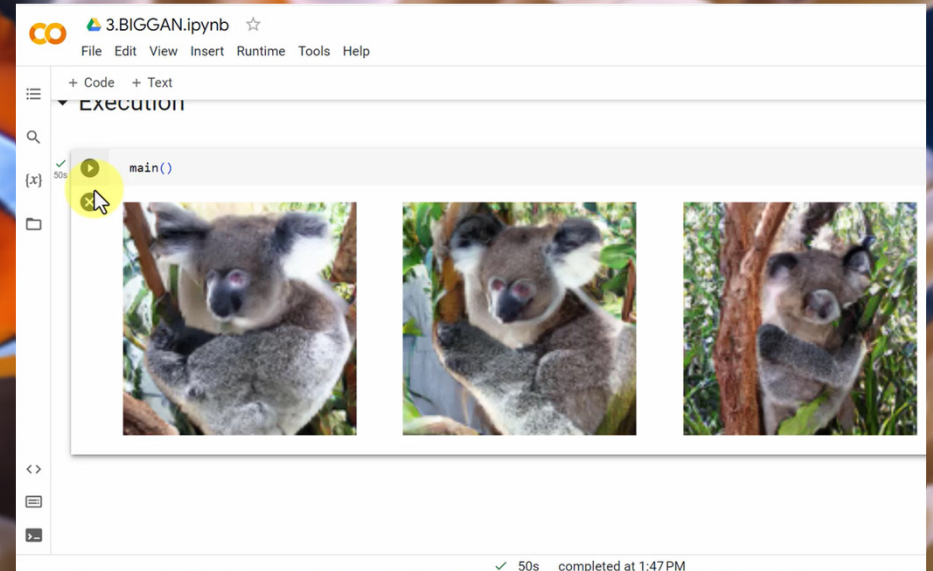
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