

Neural Style Transfer

Neural Style Transfer

□ 스타일 전이



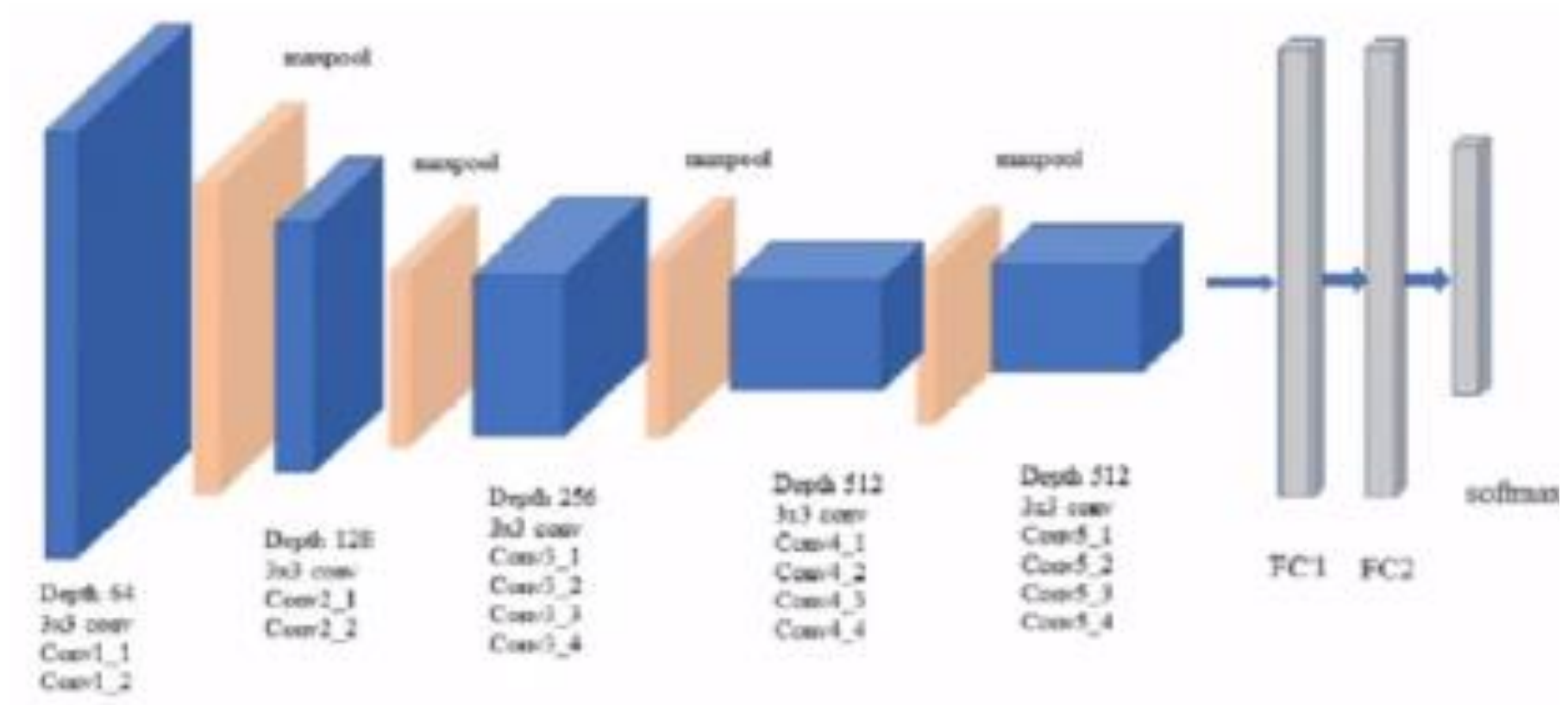
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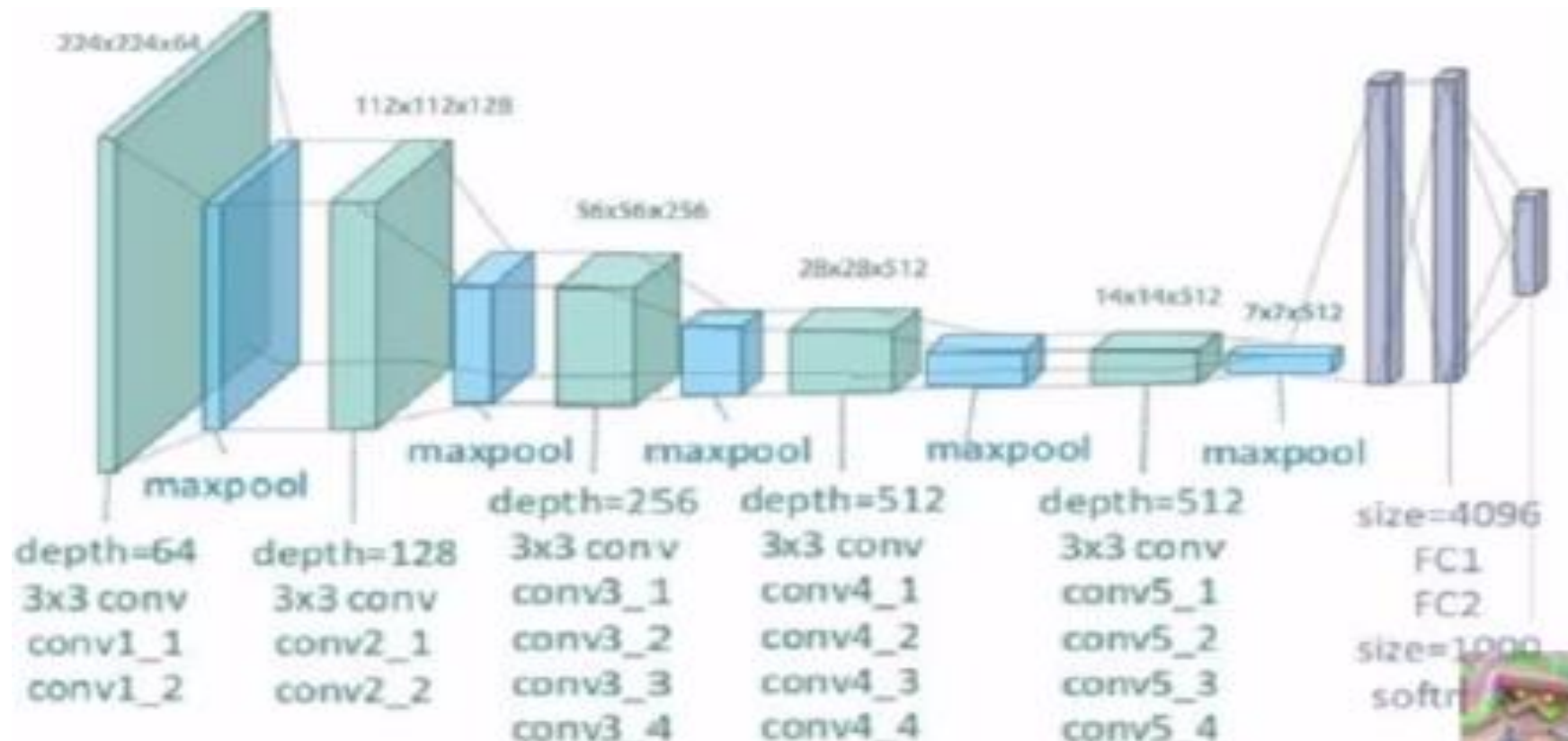
- 스타일 전이
 - CNN에서 콘테츠와 스타일 표현의 분리
 - VGG CNN을 사용



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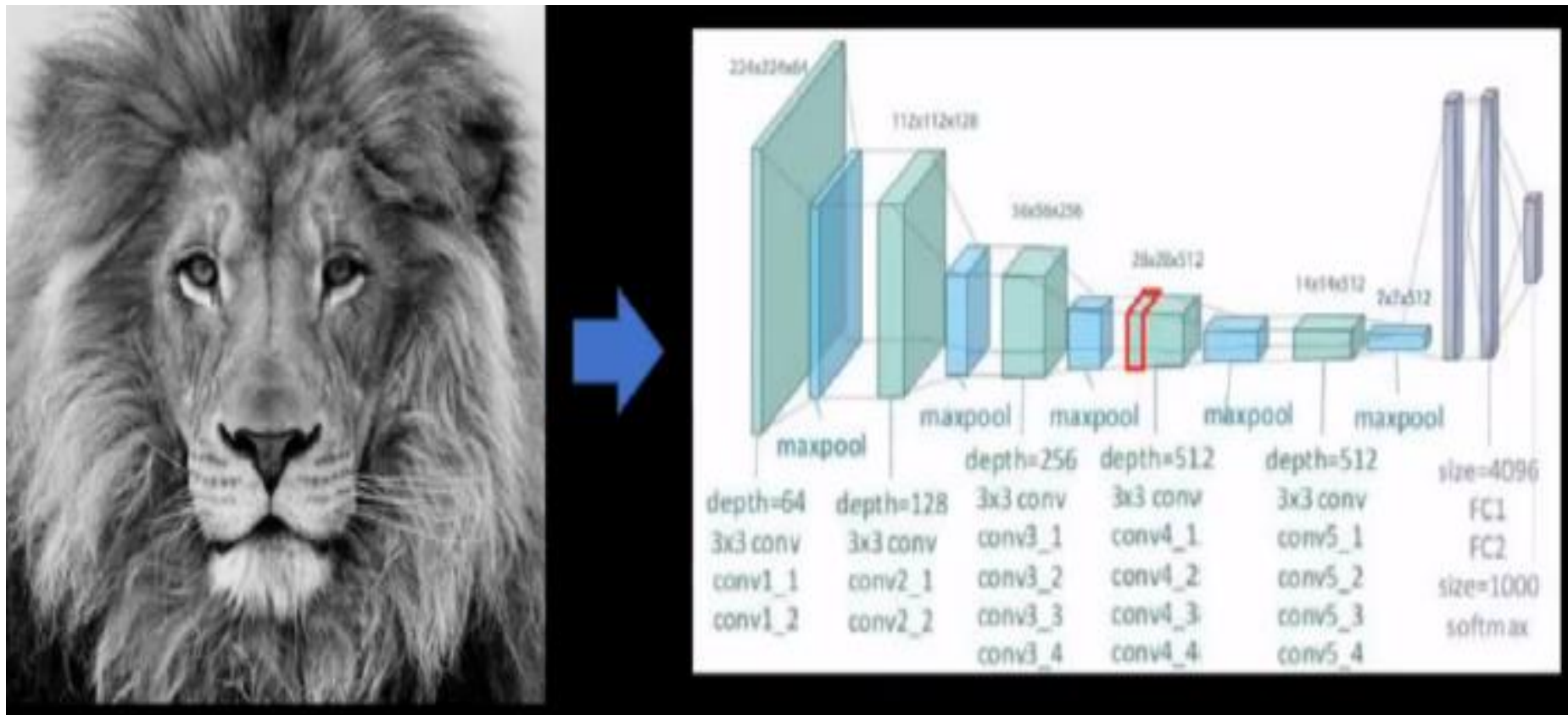
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- VGG-19 이미지넷에서 객체탐지 훈련
- 2014년 Localization 에서 1등 (But 분류는 2등, GoogleNet이 1등)



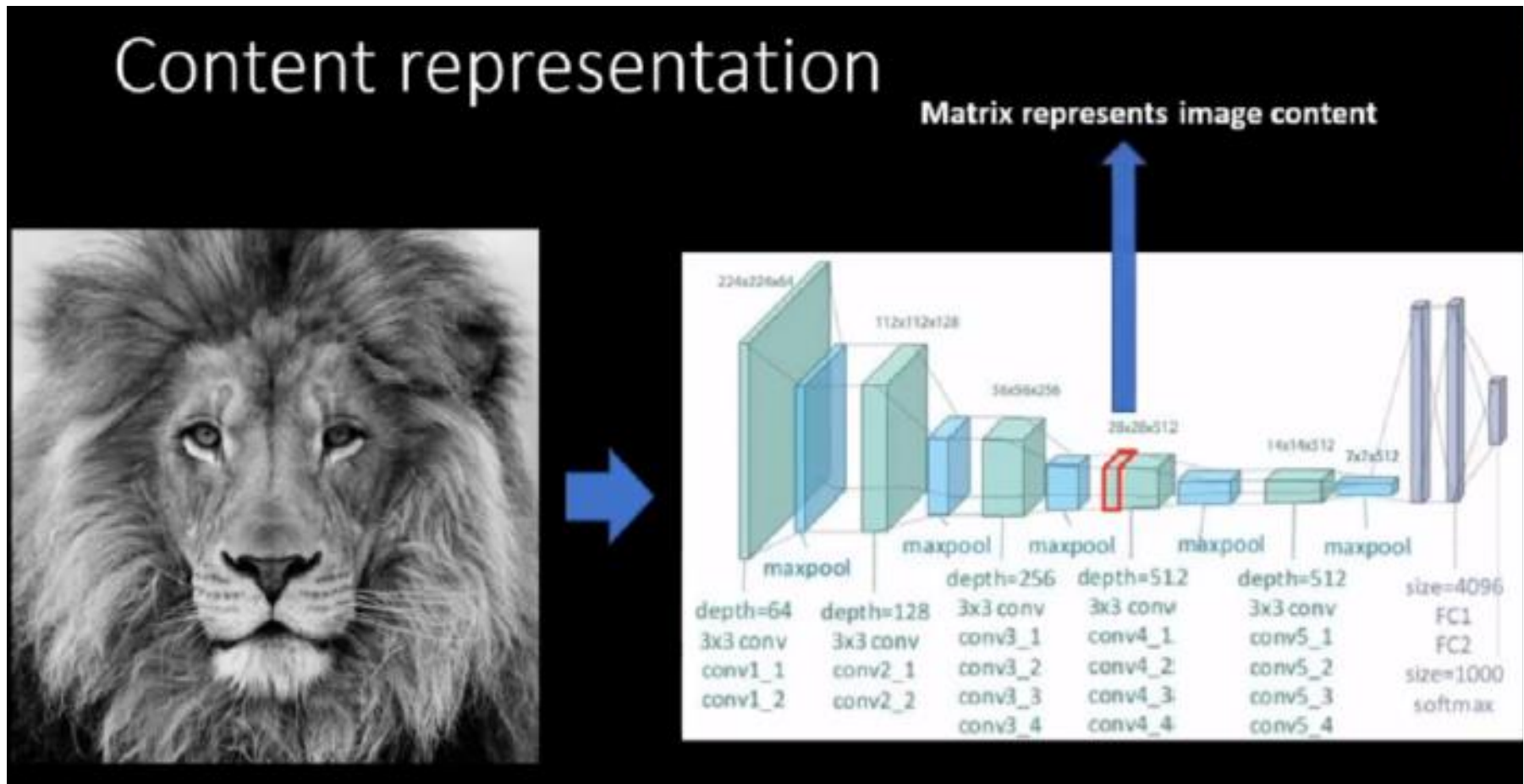
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□ 콘텐츠 표현



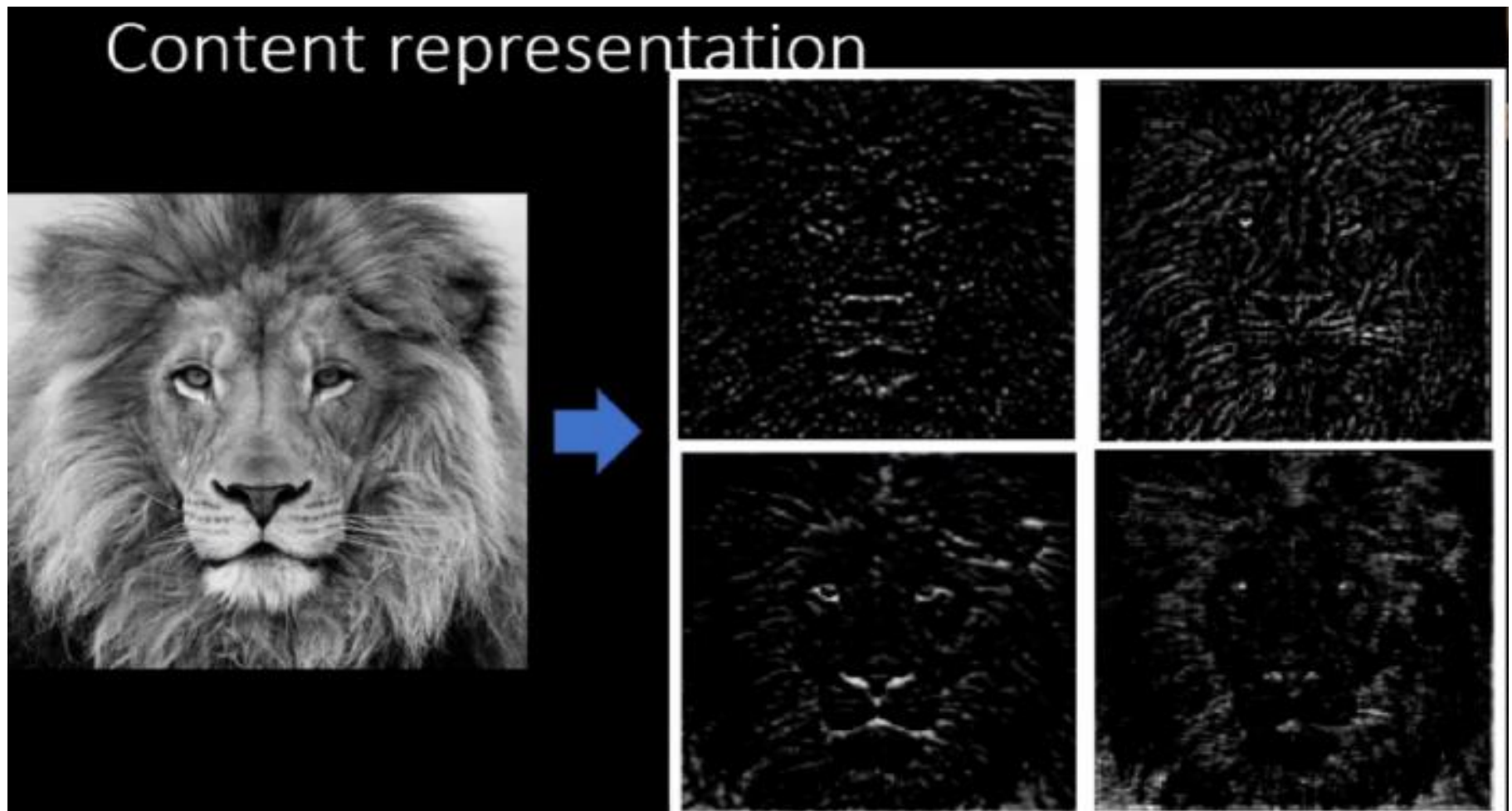
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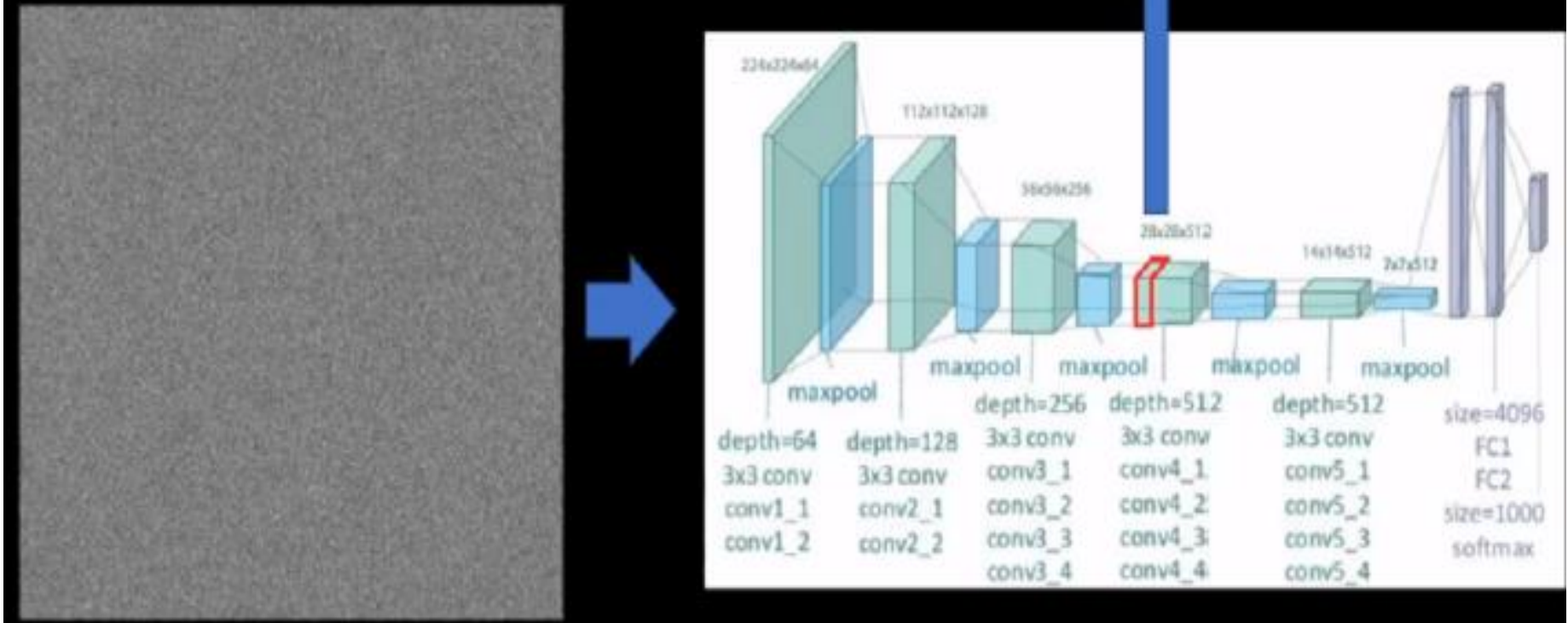


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□ 콘텐츠 표현

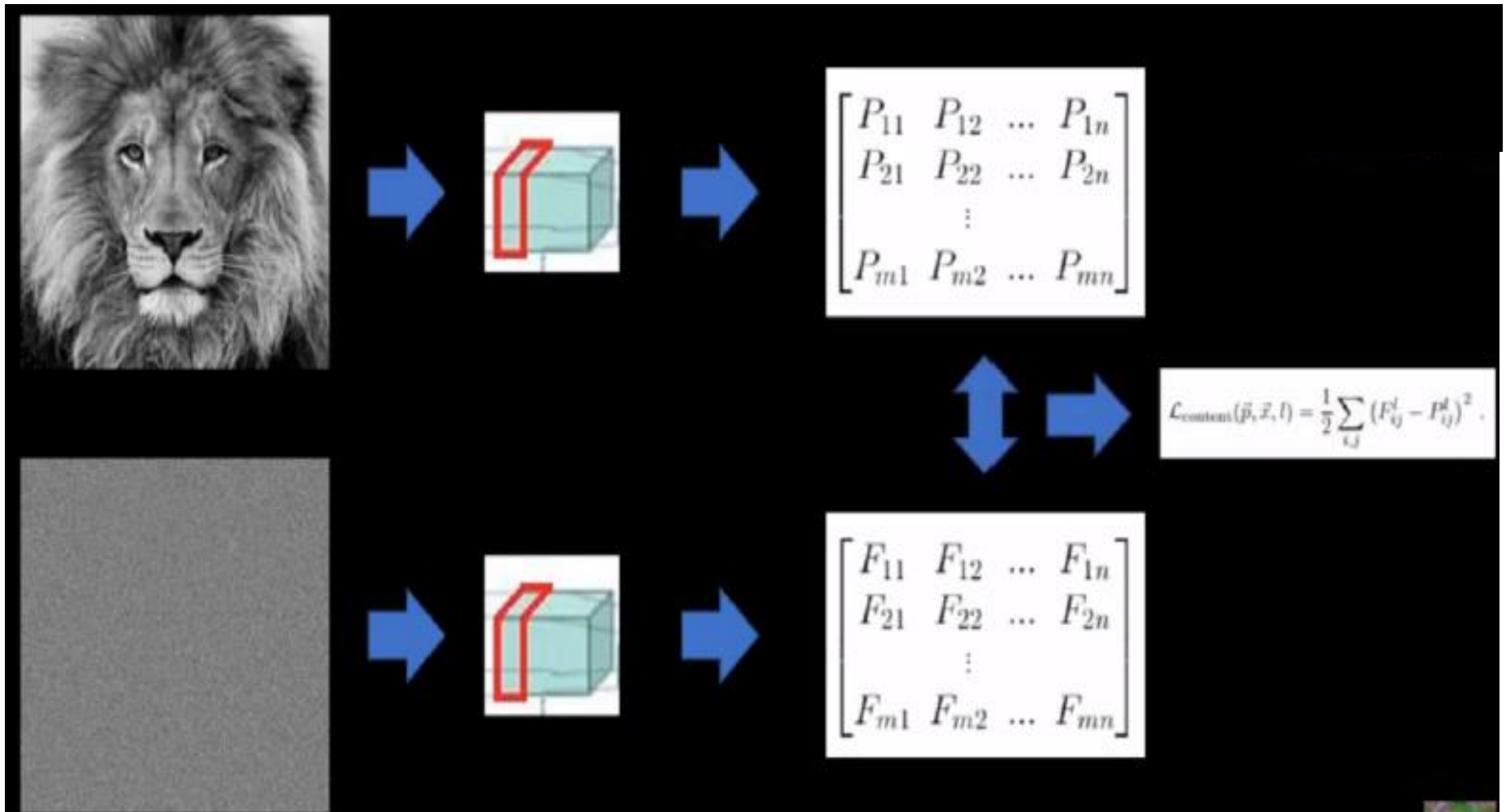
Content representation

Matrix represents image content



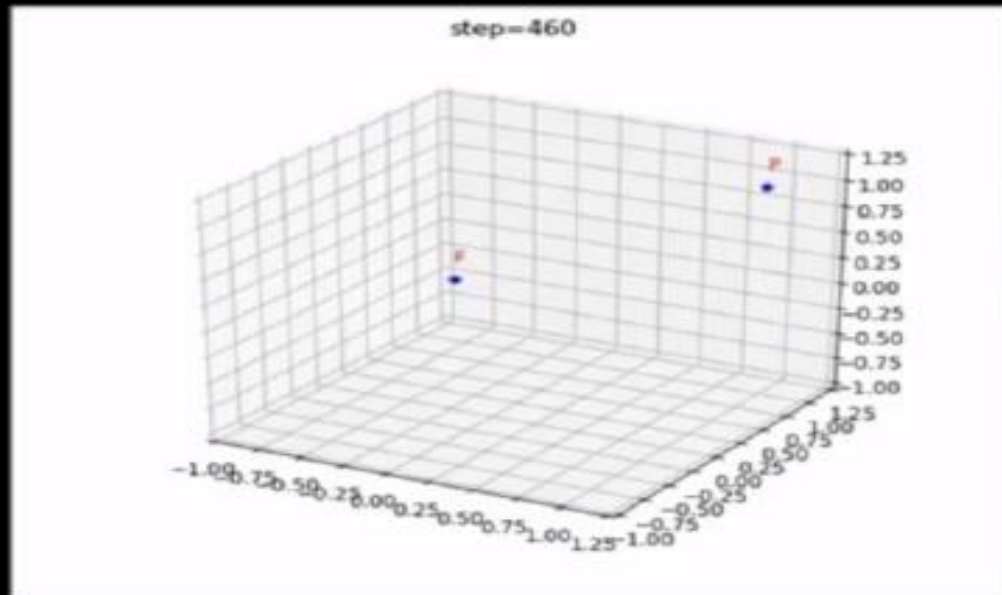
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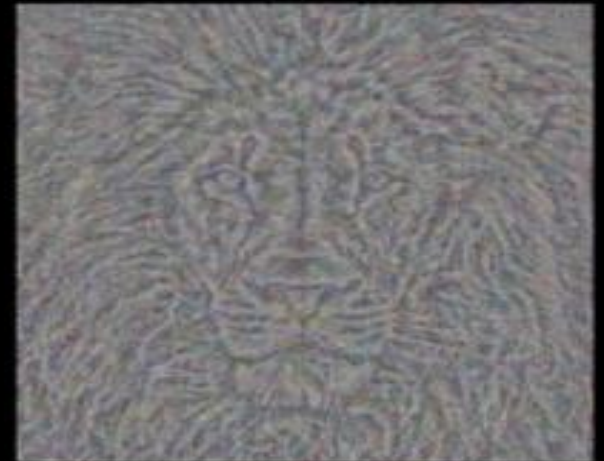
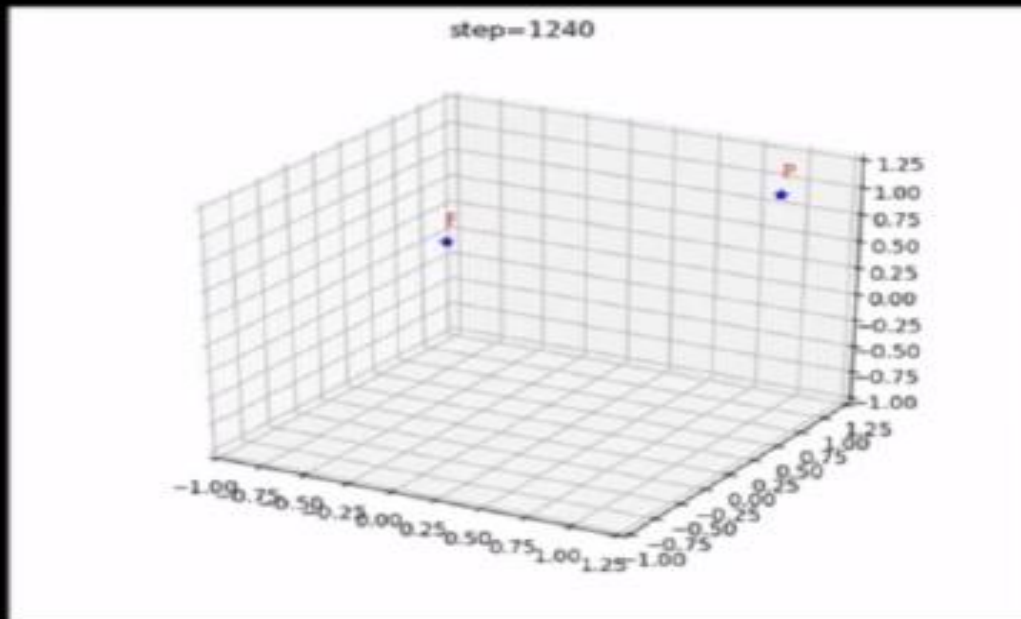
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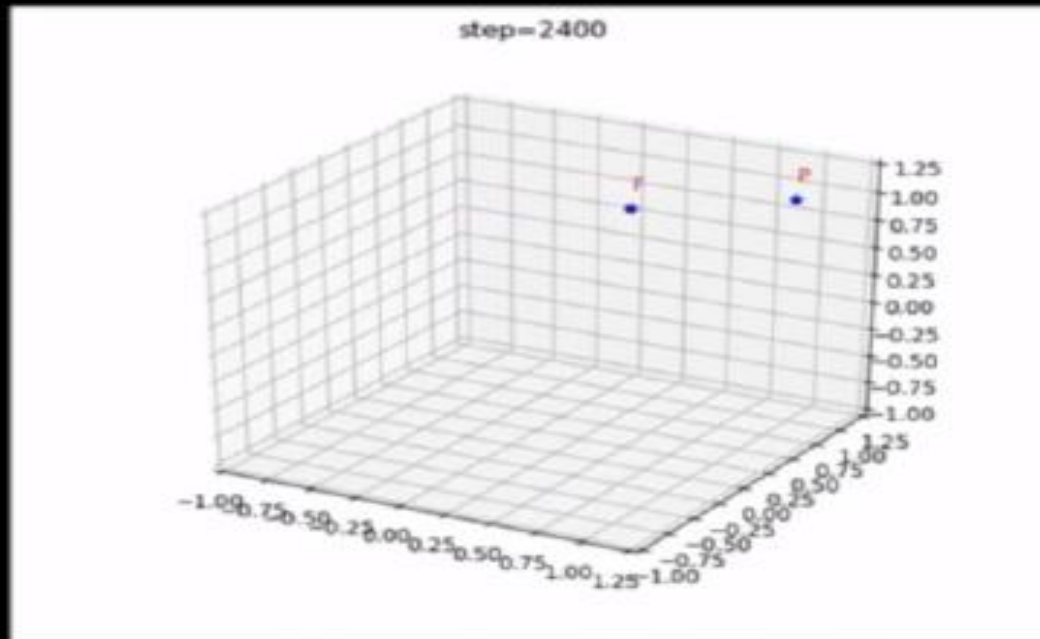
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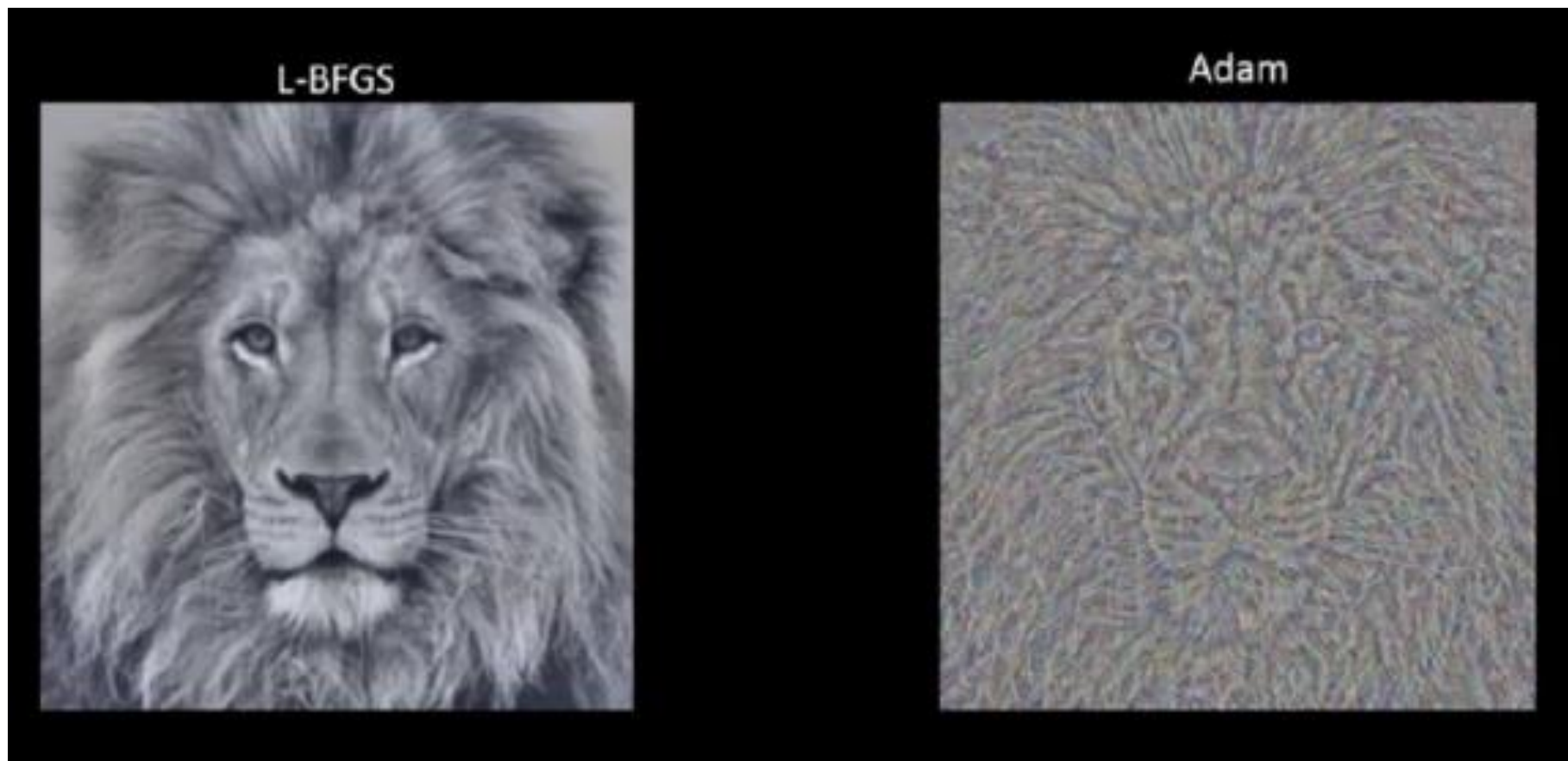
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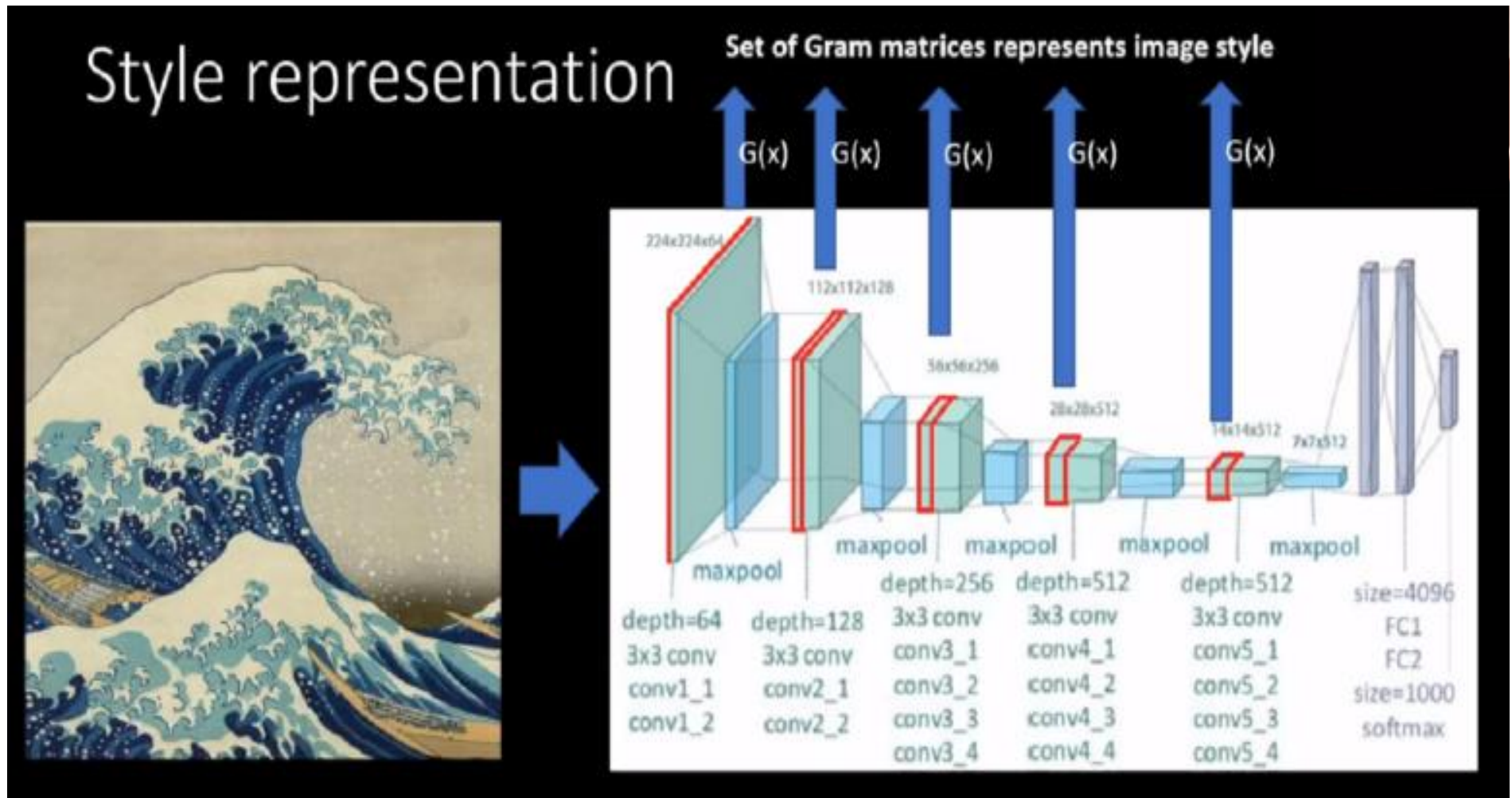
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- L-BFGS 대 Adam optimizer (1000 반복시행 후)



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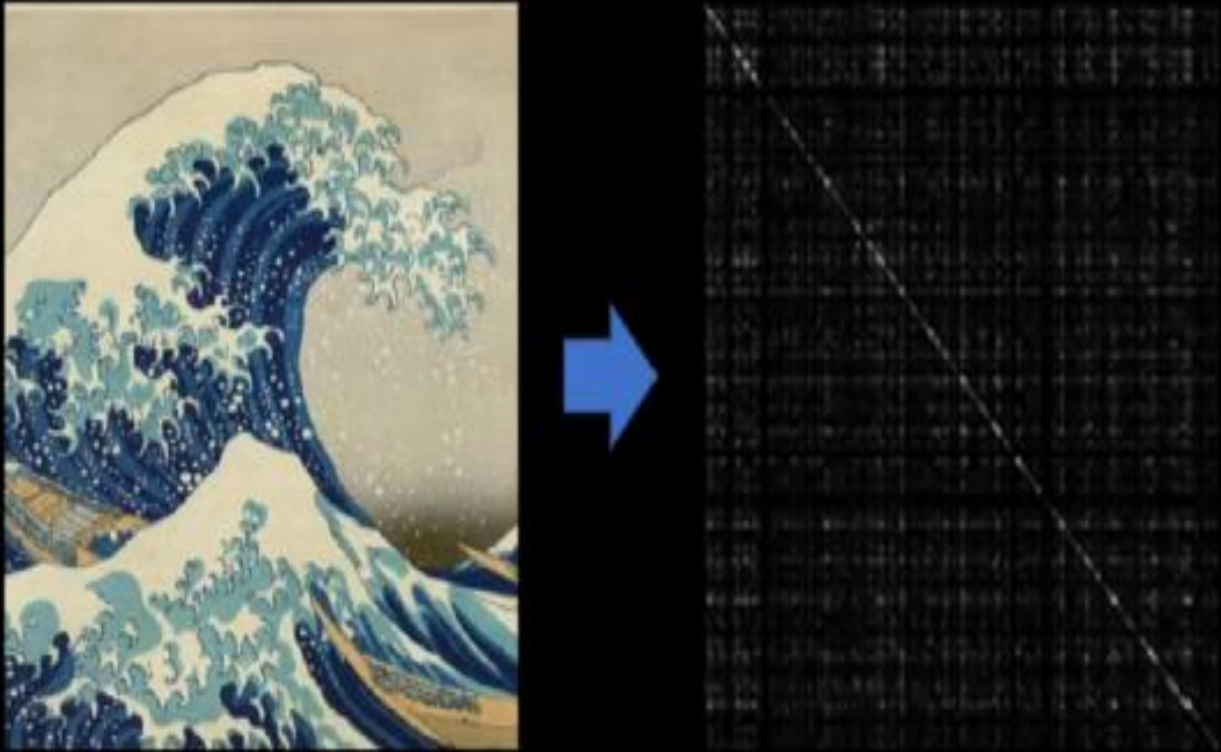
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- 그램 행렬(Gram matrix): 특성 맵간의 상관관계

Q: which feature maps tend to activate together?

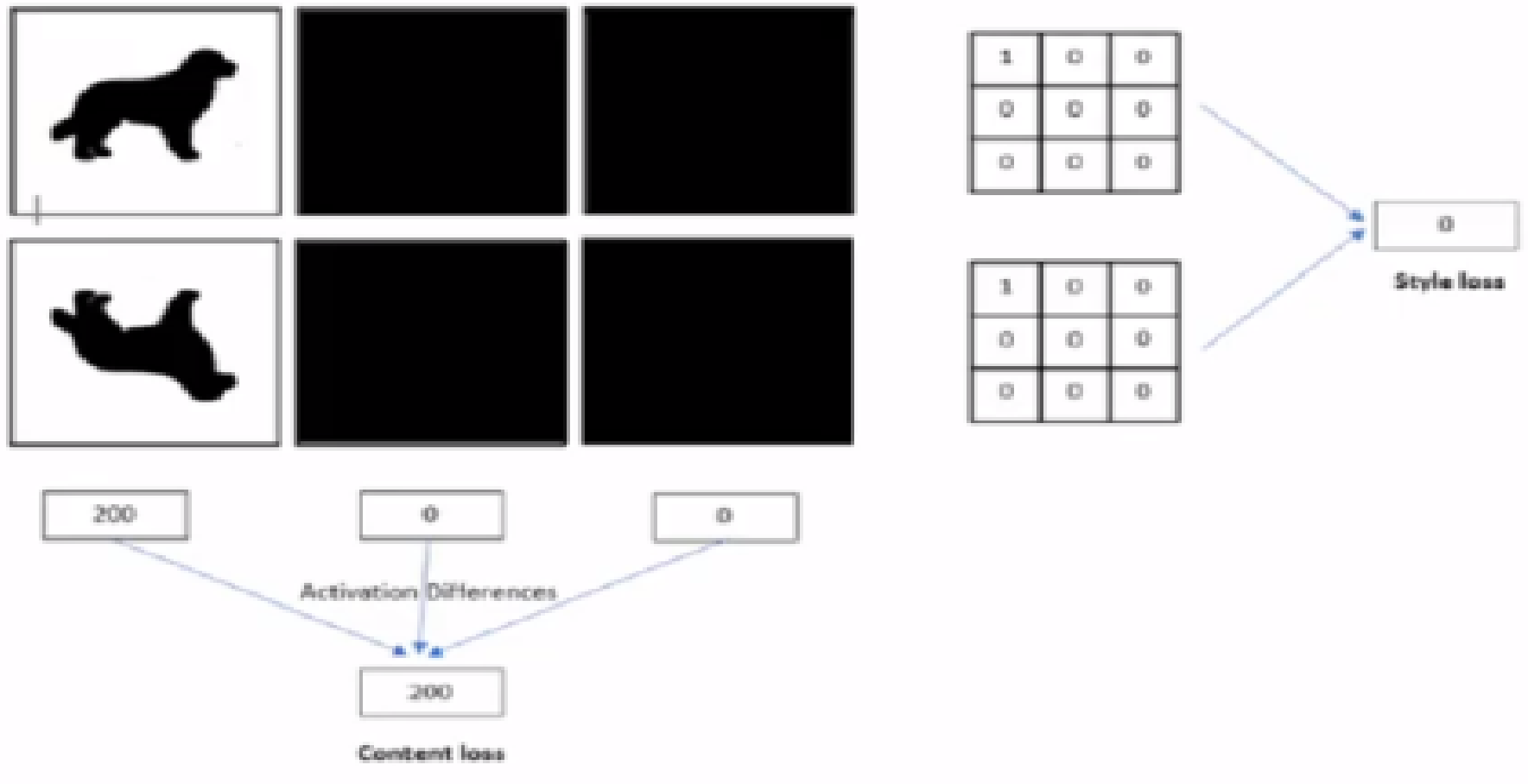


Calculation:

$$G_{ij} = \langle v_i, v_j \rangle$$

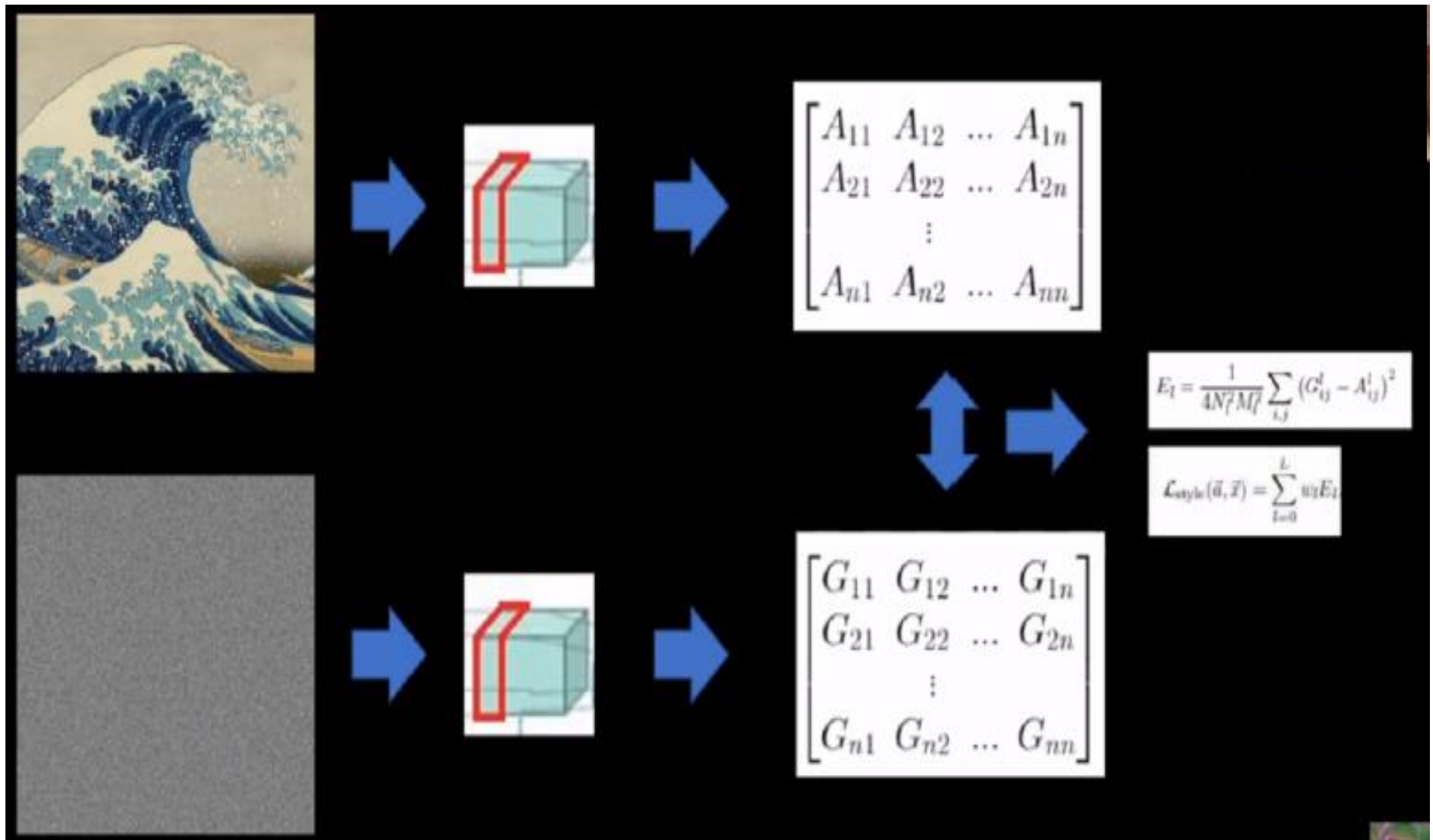
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- 그림 설명 (Not perfect but has some intuition)



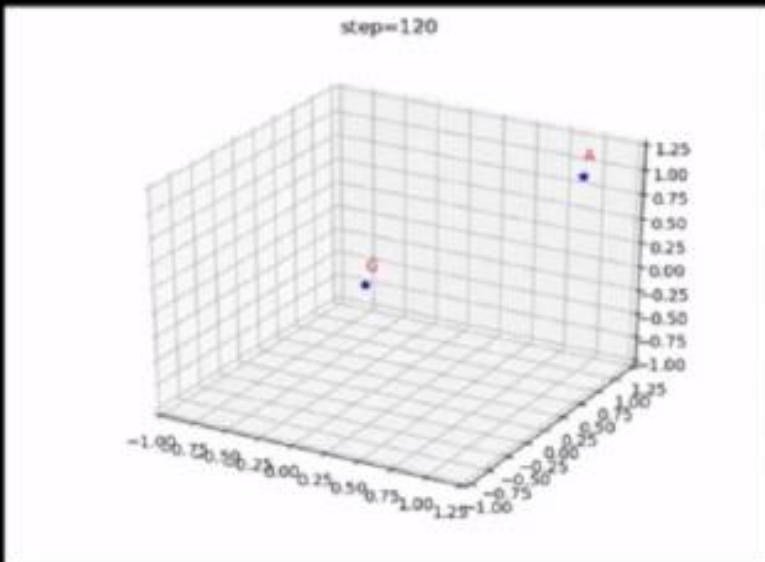
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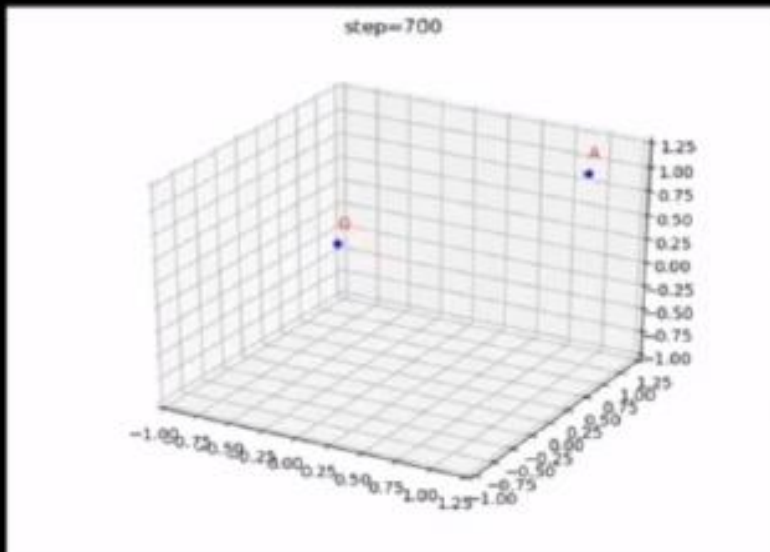
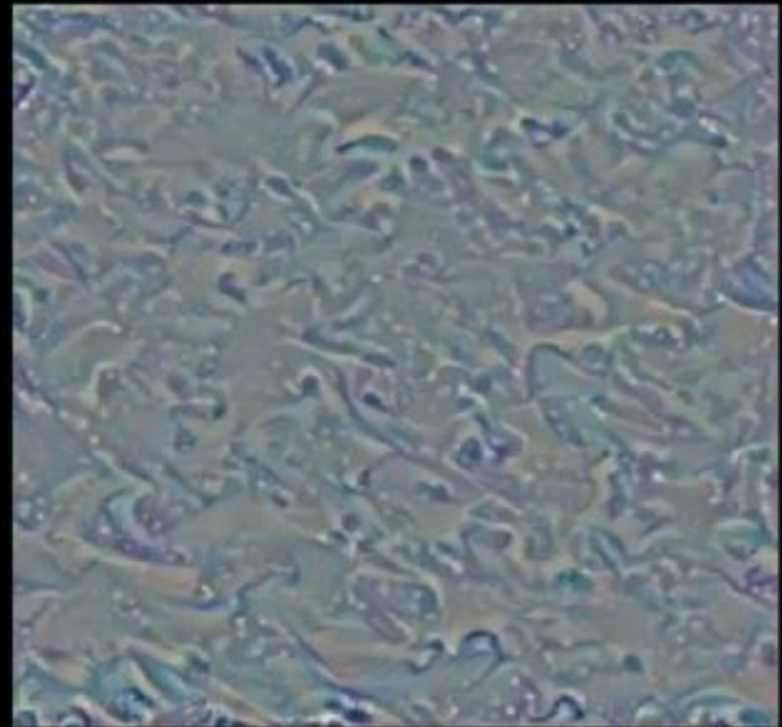
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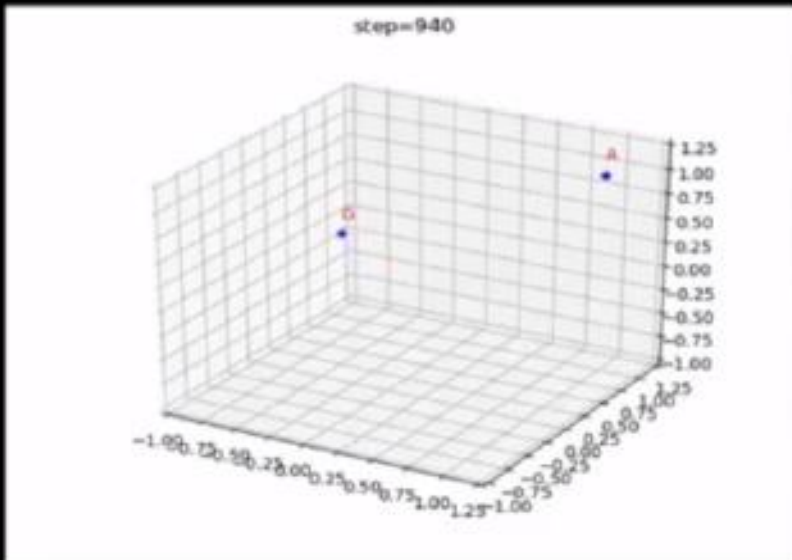
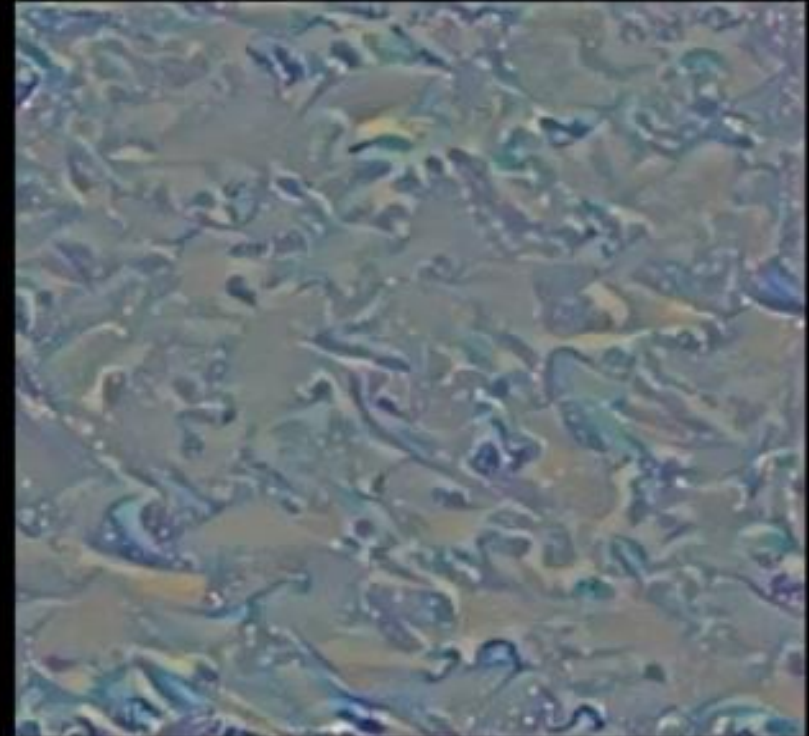
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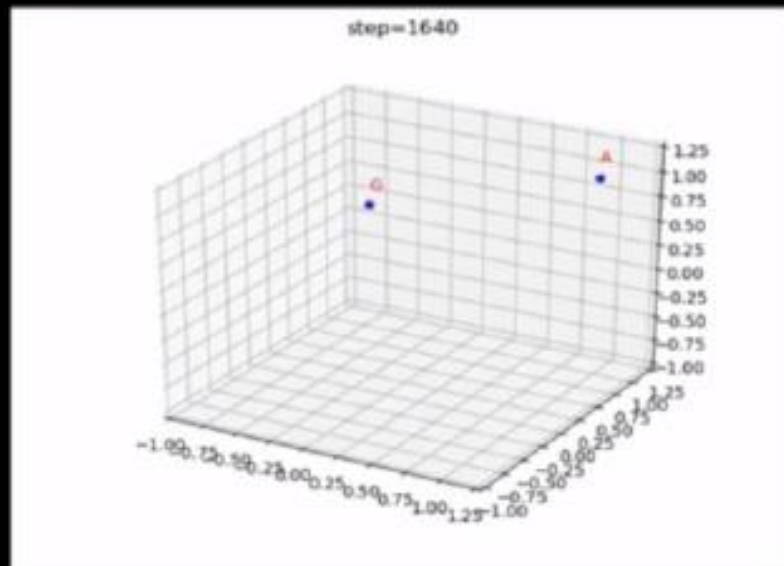
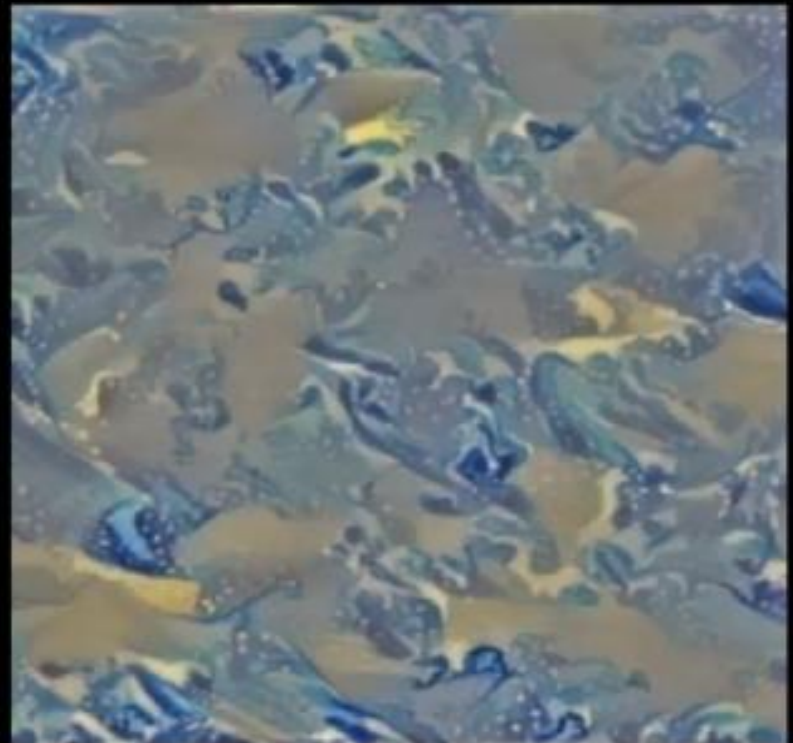
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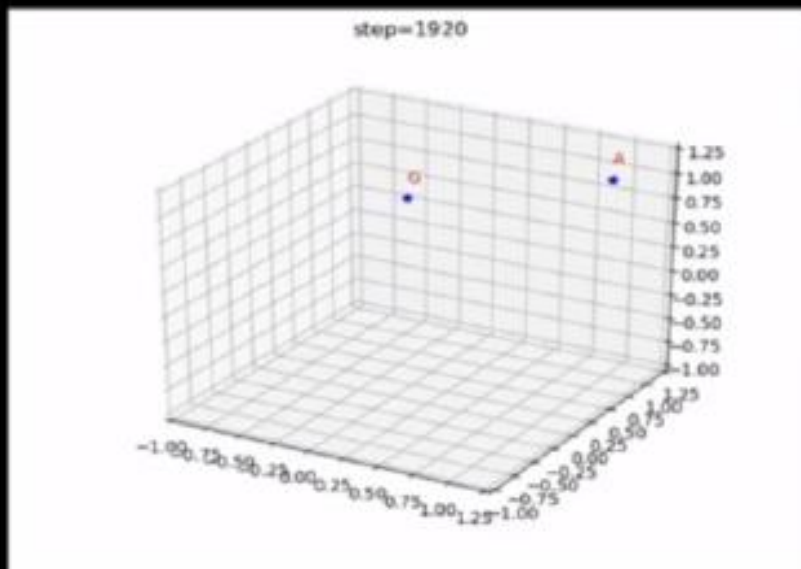
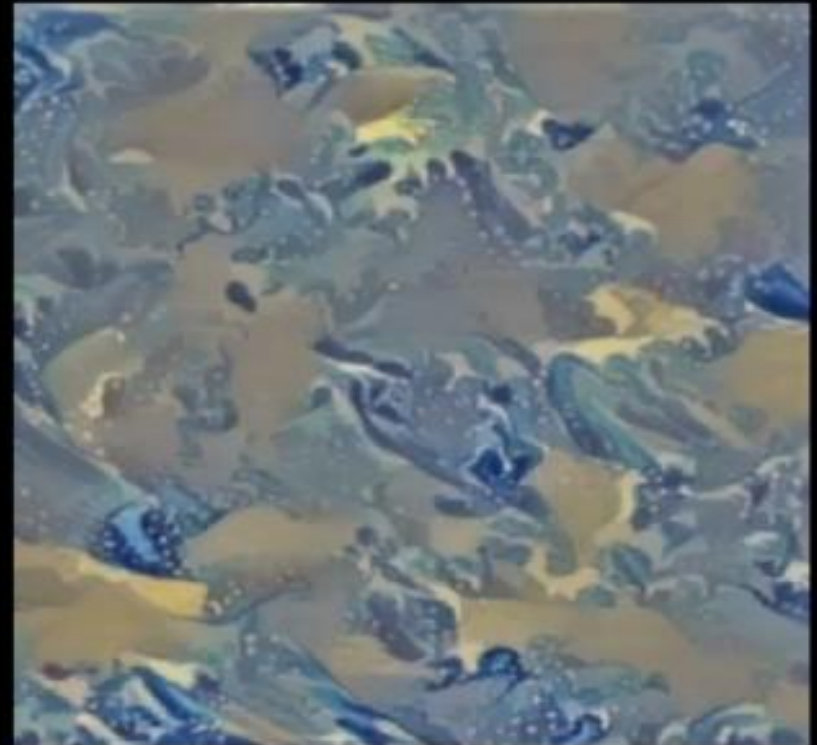
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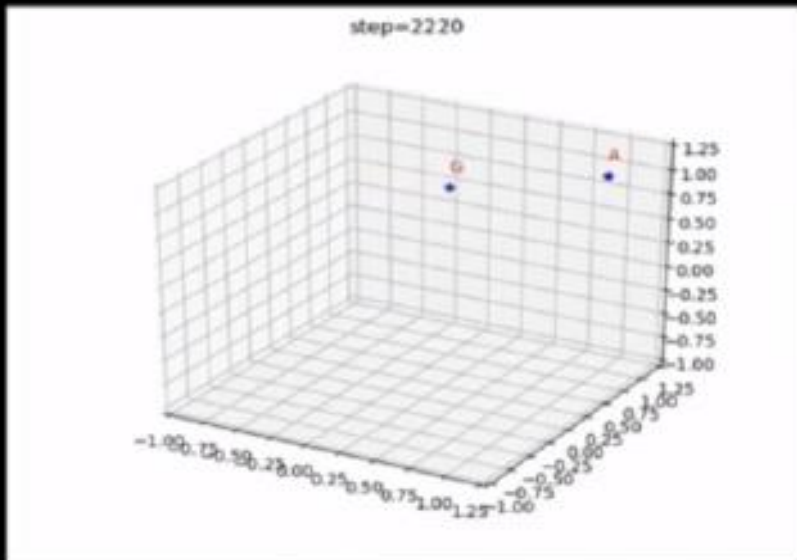
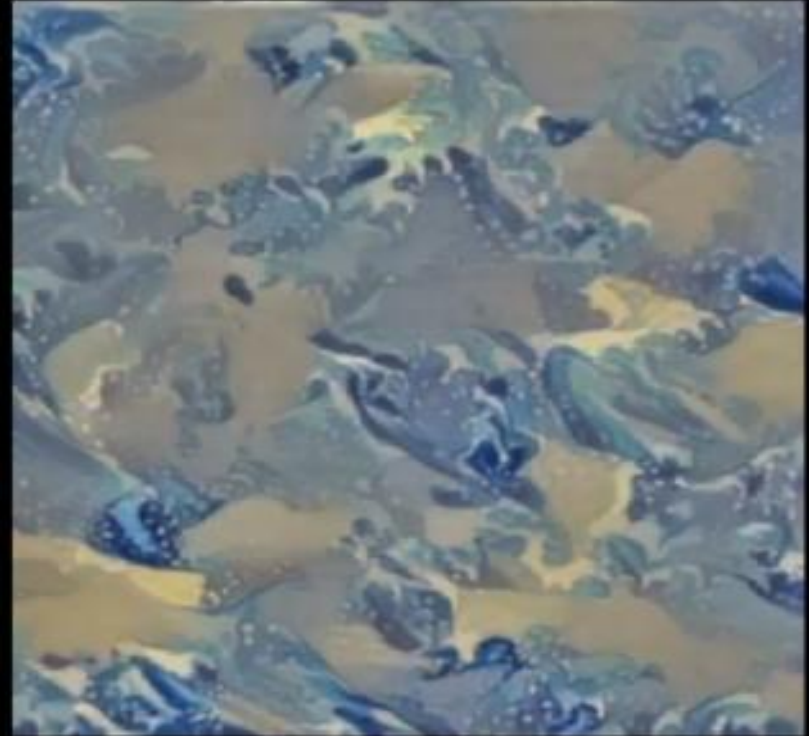
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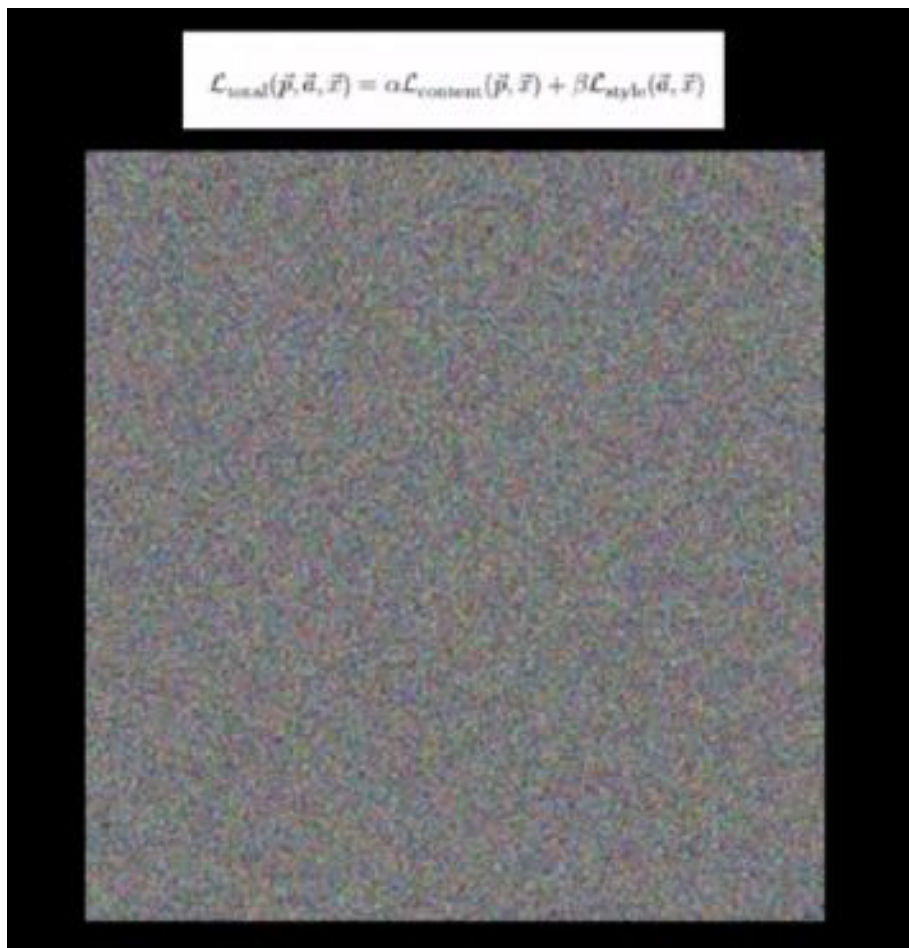
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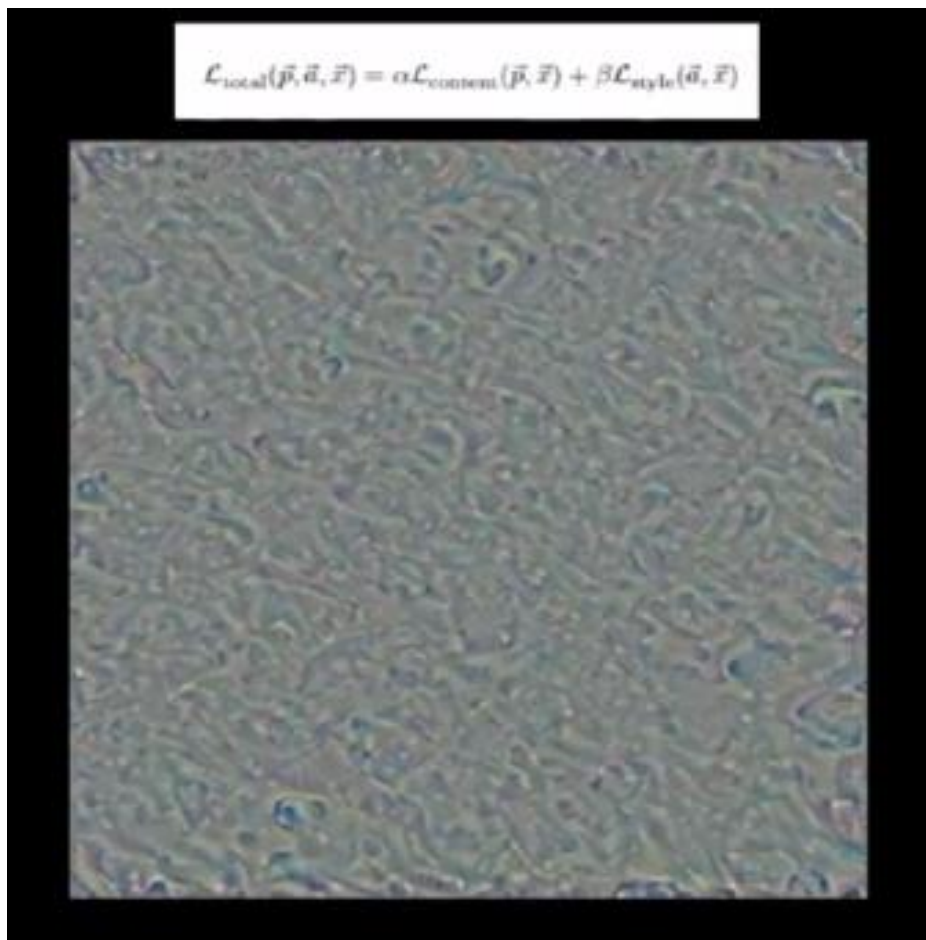
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- 이제 콘텐츠 + 스타일을 모두 합하자.



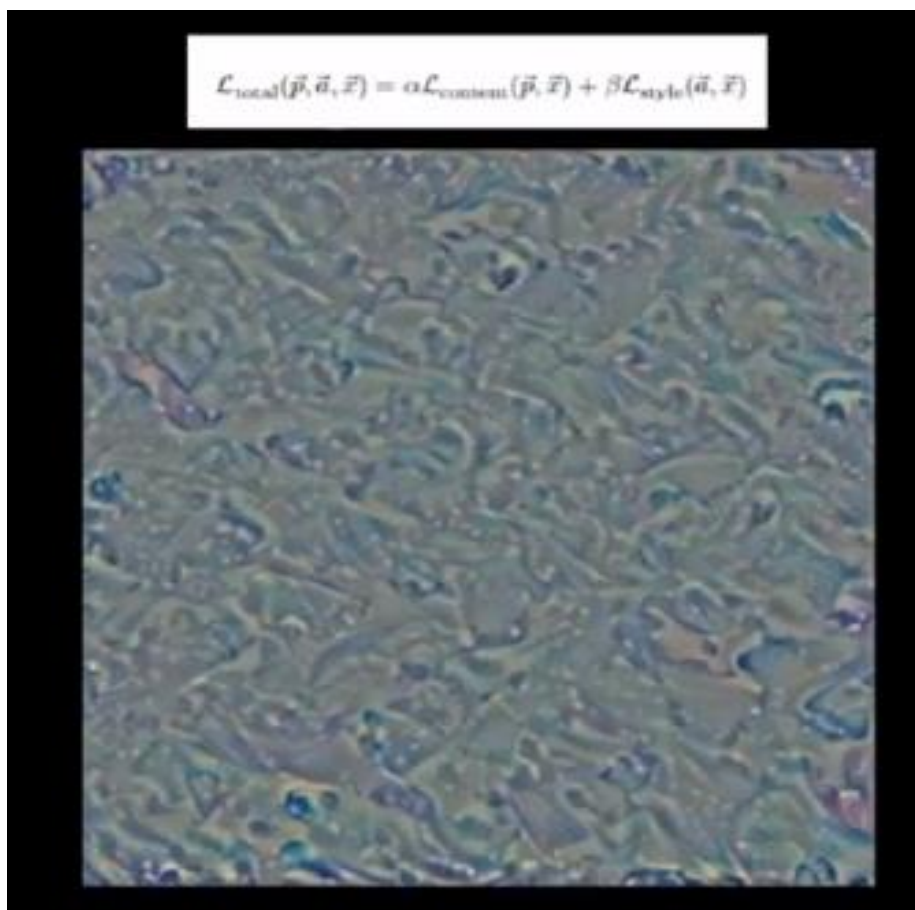
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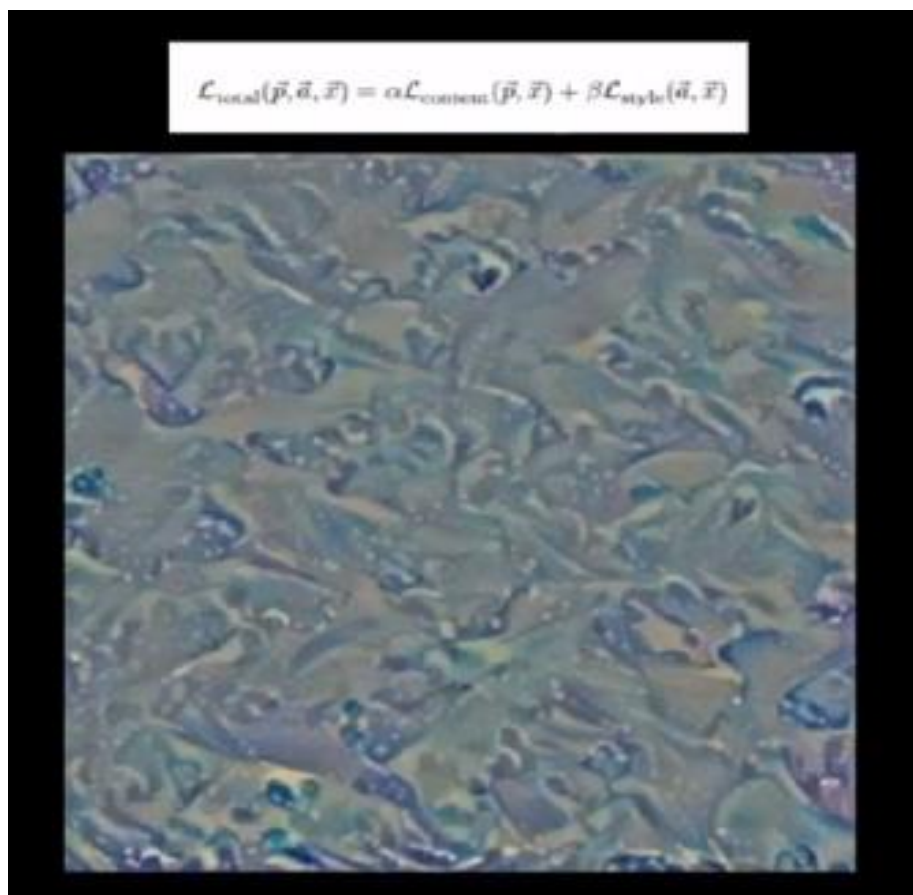
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