

Image Aesthetic Assessment by GAN

인공지능랩 김수은

Project. Image Aesthetic Assessment by GAN

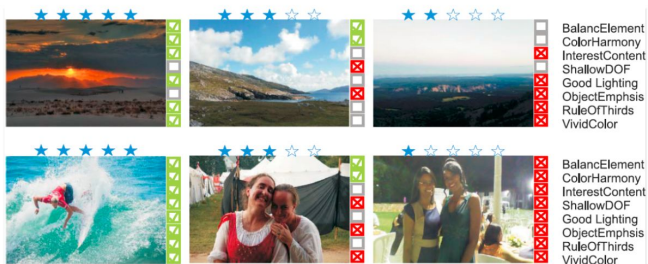
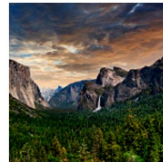
제목: Image aesthetic assessment by various GAN models

데이터: <Image Aesthetic Assessment Assisted by Attributes through Adversarial Learning> 논문에서 쓰인 AADB dataset 이용

Deep Understanding of Image Aesthetics

Shu Kong, Xiaohui Shen, Zhe Lin, Radomir Mech, Charles Fowlkes

latest update: Oct 19, 2016 (page construction is done. Email me if you have further questions on the code or dataset.)



<https://www.ics.uci.edu/~skong2/aesthetics.html>

Project 참고 논문

제목: <Image Aesthetic Assessment Assisted by Attributes through Adversarial Learning, 2019>



Aesthetic score	10%	Motion Blur	50%
Balancing Elements	50%	Object	20%
Color Harmony	30%	Repetition	0%
Content	0%	Rule of Thirds	50%
Depth of Field (DoF)	40%	Symmetry	0%
Light	0%	Vivid Color	10%

Aesthetic score	95%	Motion Blur	50%
Balancing Elements	50%	Object	50%
Color Harmony	90%	Repetition	0%
Content	90%	Rule of Thirds	70%
Depth of Field (DoF)	100%	Symmetry	0%
Light	70%	Vivid Color	100%



Figure 1: Two examples of aesthetic images (upper: low aesthetics; lower: high aesthetics) with respect to eleven assessment attributes. The ratings of the aesthetic score and attributes are written as percentage for convenience.

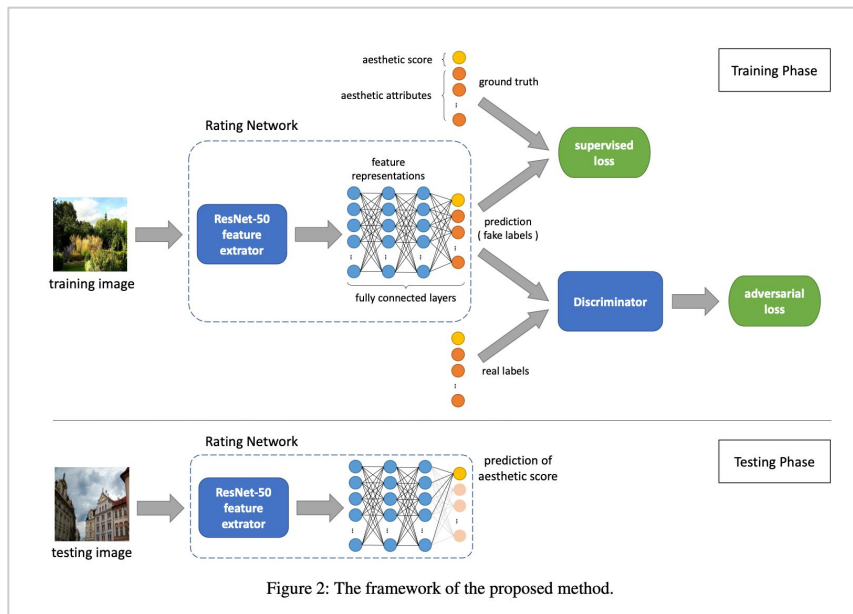


Figure 2: The framework of the proposed method.

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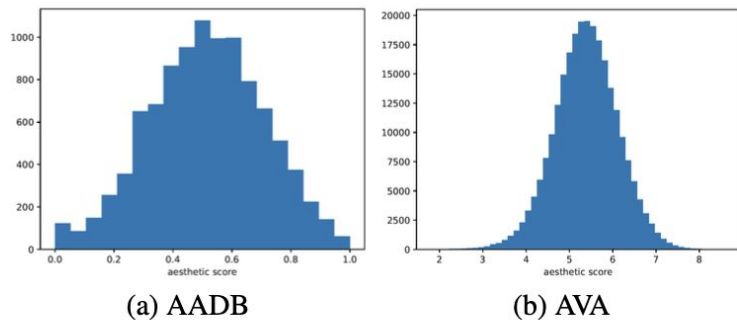


Figure 3: The distributions of the aesthetic scores on the AADB and AVA databases.

Table 1: Experimental results of image aesthetic assessment.

AADB database	
Methods	ρ
(Kong et al. 2016)	0.6782
(Hou, Yu, and Samaras 2017)	0.6889
(Malu, Bapi, and Indurkha 2017)	0.689
Single-task Network	0.6833
Multi-task Network	0.6927
Ours	0.7041

AVA database	
Methods	ρ
(Kong et al. 2016)	0.5581
Single-task Network	0.6062
Multi-task Network	0.6187
Ours	0.6313

Project. 내용

1. DCGAN
2. WGAN
3. SGAN(셀프-어텐션)

각각 모델의 방법론, 손실함수를 적용해보고 성능 비교 및 평가 진행

어떤 모델이 **Image aesthetic assessment** 에 뛰어난 성능을 보이는지 수행

Problem.

- Federal learning 적용 포인트 찾기
- 진행하던 프로젝트에 적용할 수 있는 방법론 등 서치 필요

감사합니다.

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