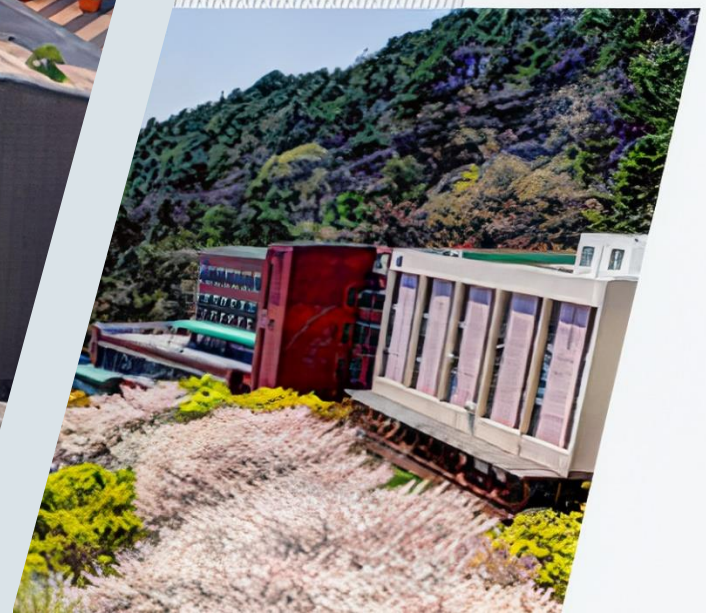
Dong-A Univ. (ISPL)

동아대학교 DONG-A UNIVERSITY

기말고사 대비문제

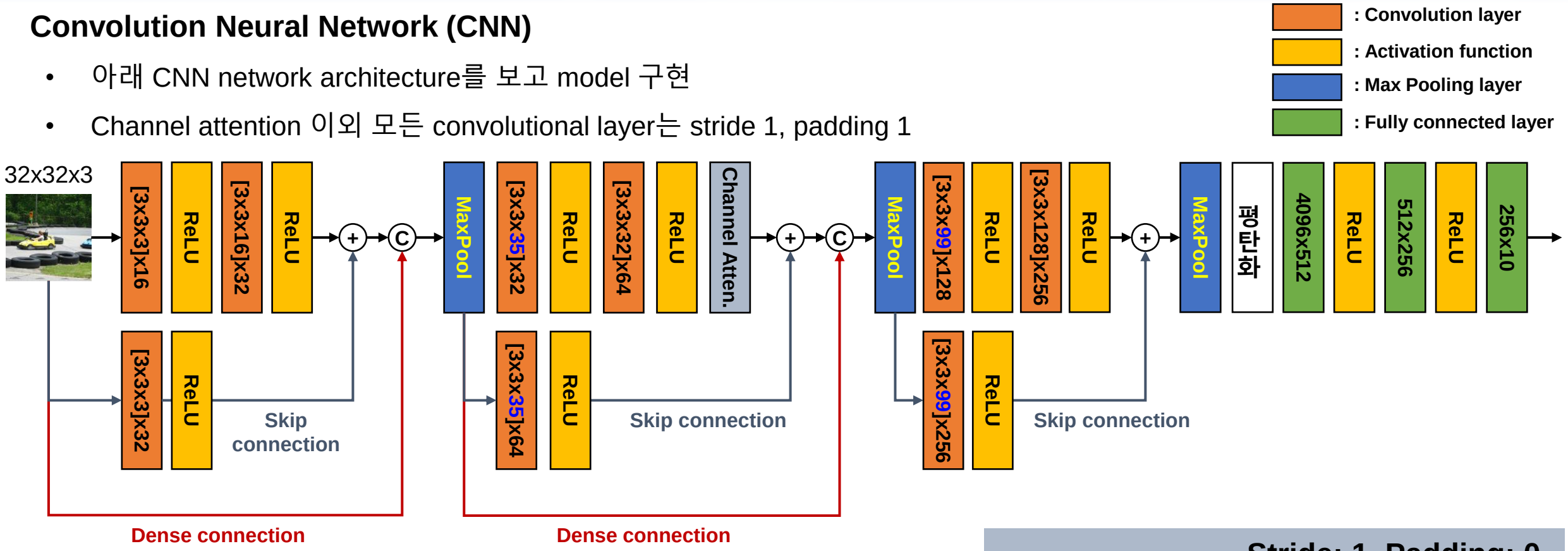
컴퓨터AI공학부

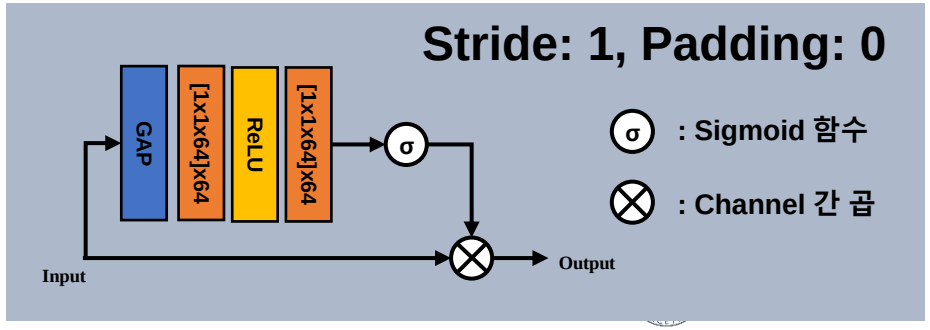
2024년 2학기 머신러닝



기말고사 연습 문제[1/4]

- **Convolution Neural Network (CNN)**
  - 아래 CNN network architecture를 보고 model 구현
  - Channel attention 이외 모든 convolutional layer는 stride 1, padding 1



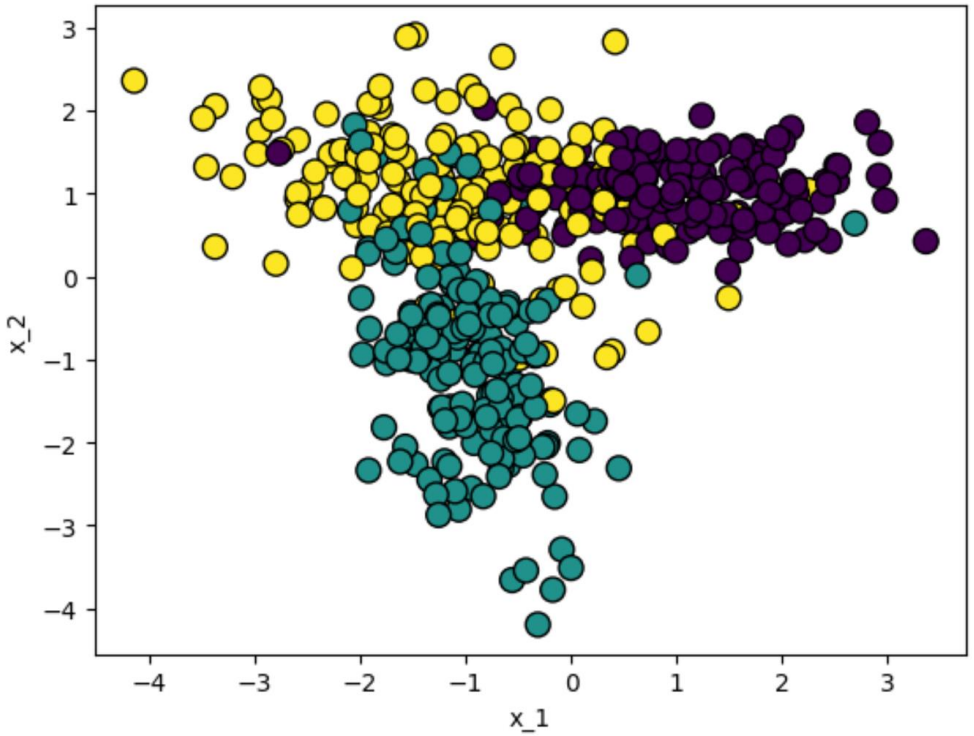


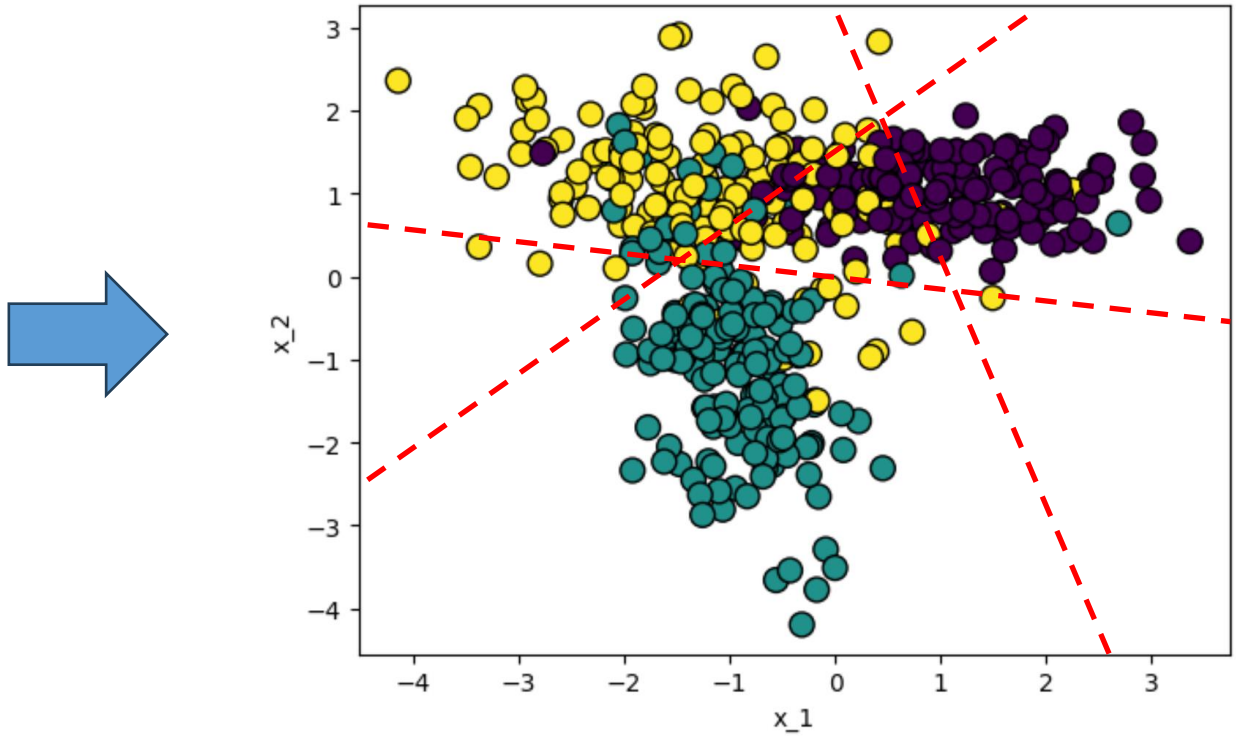
❖ **주의사항(1): Skip connection은 Width, Height, Channel이 모두 같아야 사용 가능**

❖ **주의사항(2): Dense connection (torch.cat)은 width, height이 동일해야 적용 가능**

기말고사 연습 문제[2/4]

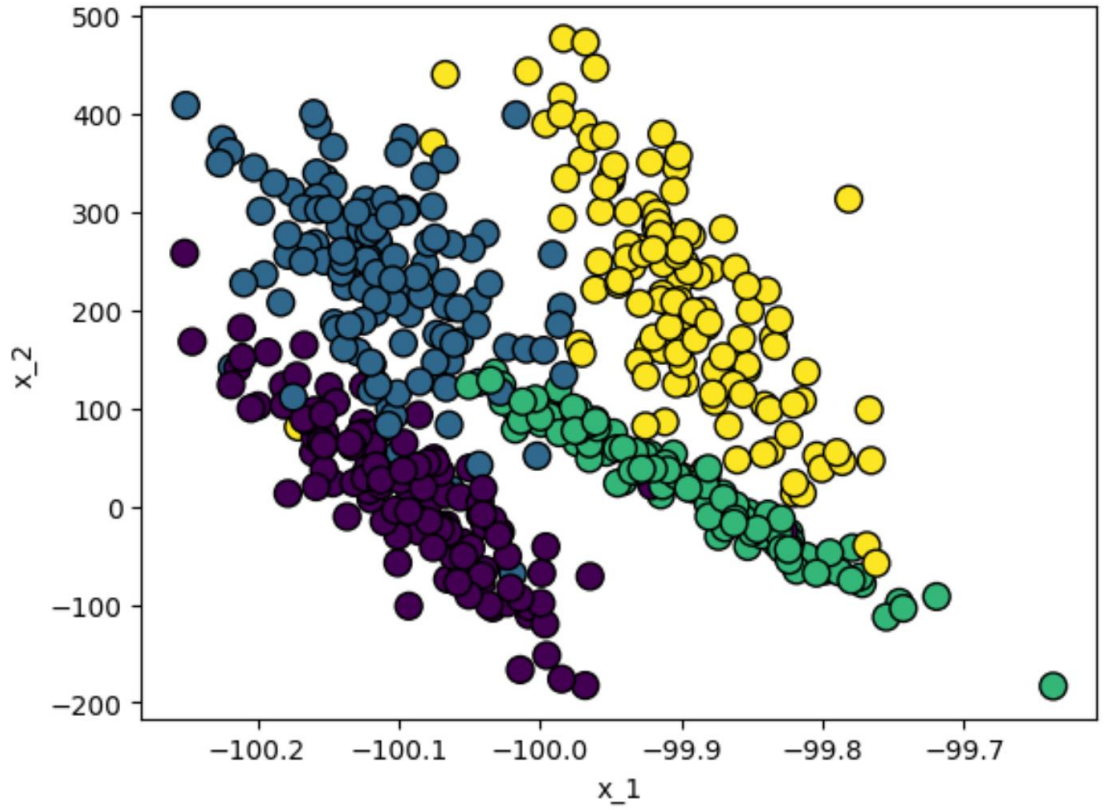
- **Support Vector Machine (SVM)**
  - 3개 클래스를 가지는 데이터에 대해 분류를 수행하는 SVM 모델 생성





기말고사 연습 문제[3/4]

- **K Nearest Neighbors (KNN)**
  - x1, x2 데이터에 대해 각각 Gaussian 정규화 수행 후 KNN 학습 및 예측 수행



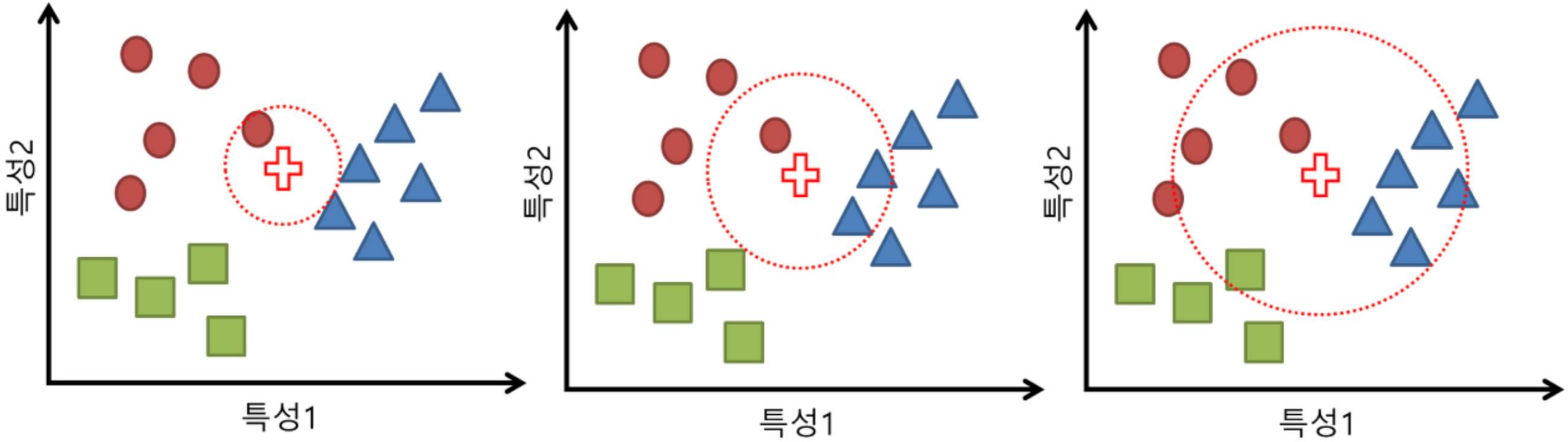
Gaussian 정규화

$$x_i^{'} = \frac{x_i - \mu}{\sigma}$$

- μ: 평균
- σ: 표준편차

기말고사 연습 문제[4/4]

- **K Nearest Neighbors (KNN)**
  - Training dataset을 80% 학습 데이터 / 20% 테스트 데이터셋으로 분류 후, 최적의 k값 도출



K = 1 K = 3 K = 9

Questions & Answers

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