UDS UNIDAD DE DATA SCIENCE UNIVERSIDAD DE CONCEPCIÓN

Domain Adaptation

Manuel Pérez Carrasco
Unidad de Data Science, Facultad de Ingeniería
Universidad de Concepción

Fecha: 06/01/2023

Universidad de Concepción

Facultad de Ingeniería
Universidad de Concepción

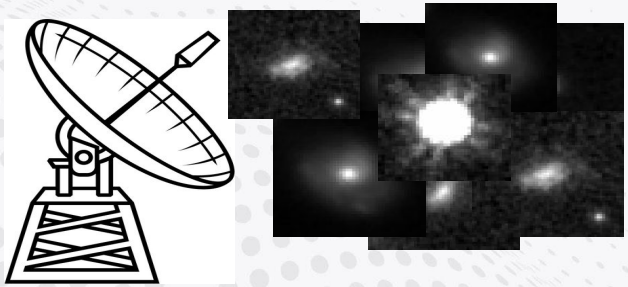
iit UdeC
INSTITUTO DE INVESTIGACIONES TECNOLÓGICAS

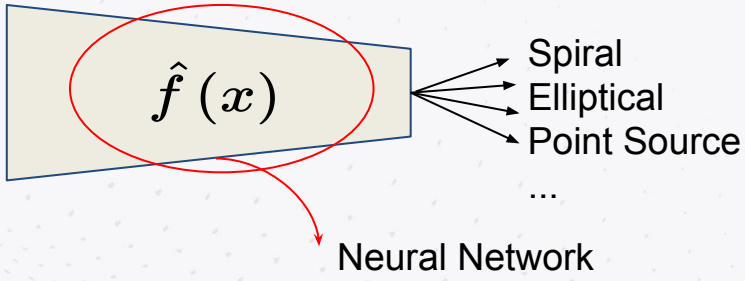
Machine Learning

For an input x and some output y, it is possible to find a mapping from the input space to the output space using a function:

$$y = f(x) + \epsilon$$

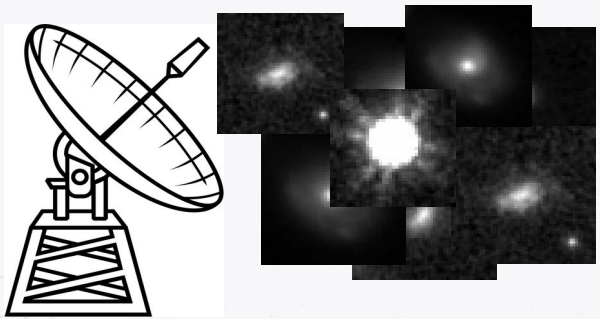
In machine learning or statistical learning we try to find an approximated function $\hat{f}(x)$ using data. Neural networks are a machine learning models.

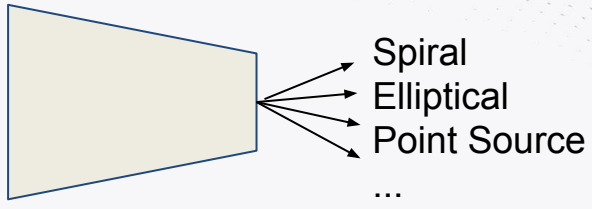




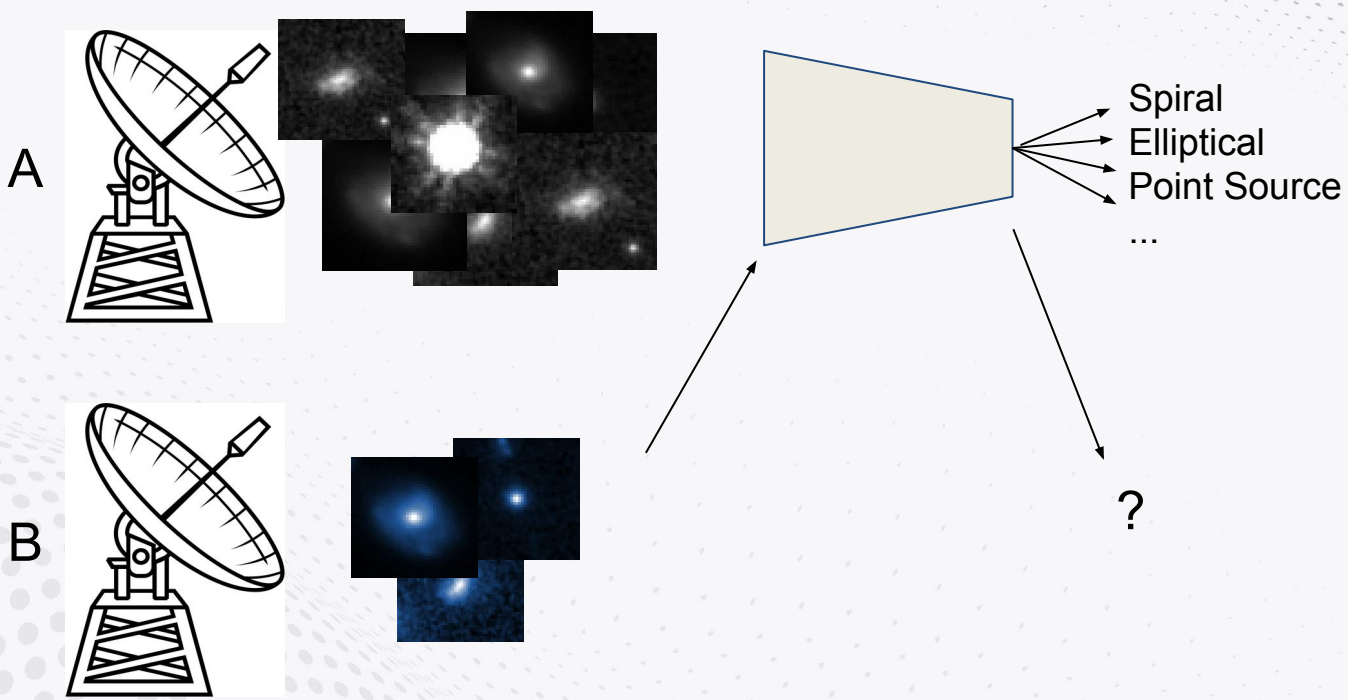
Domain shift

A

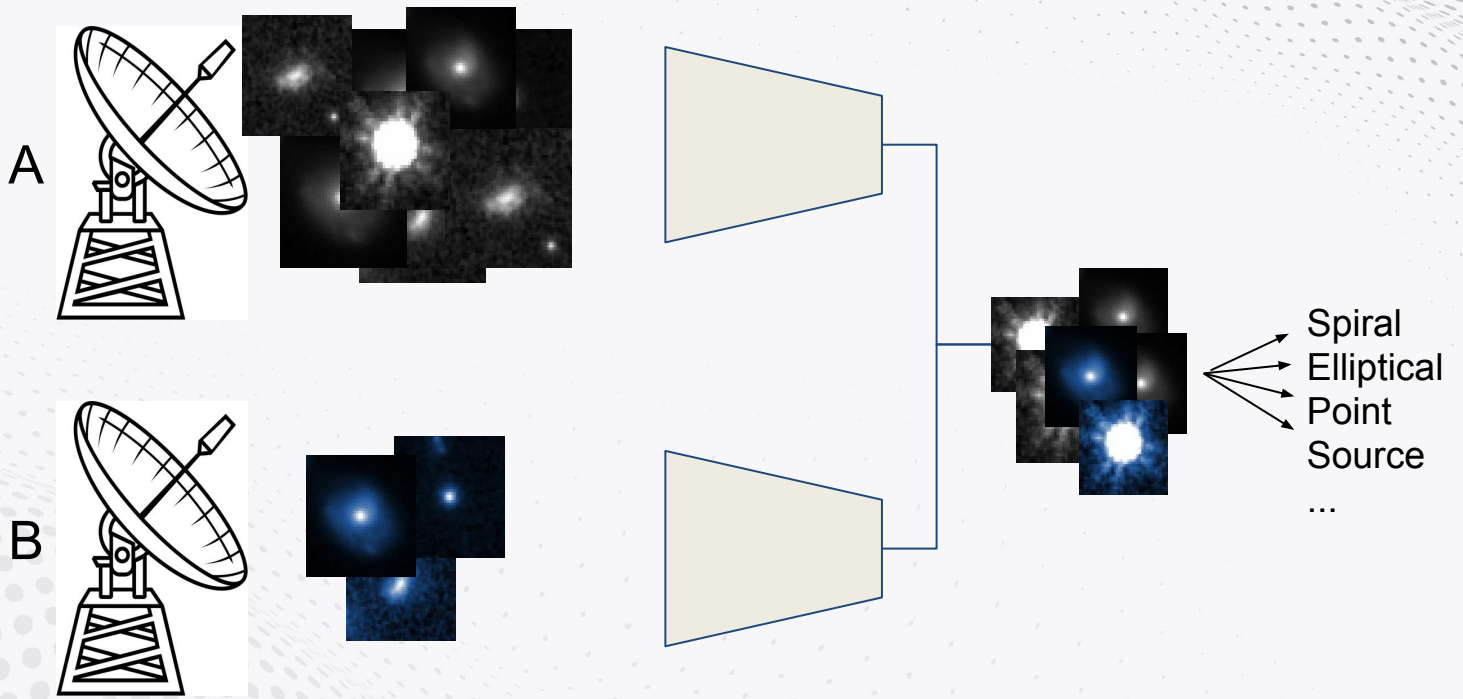




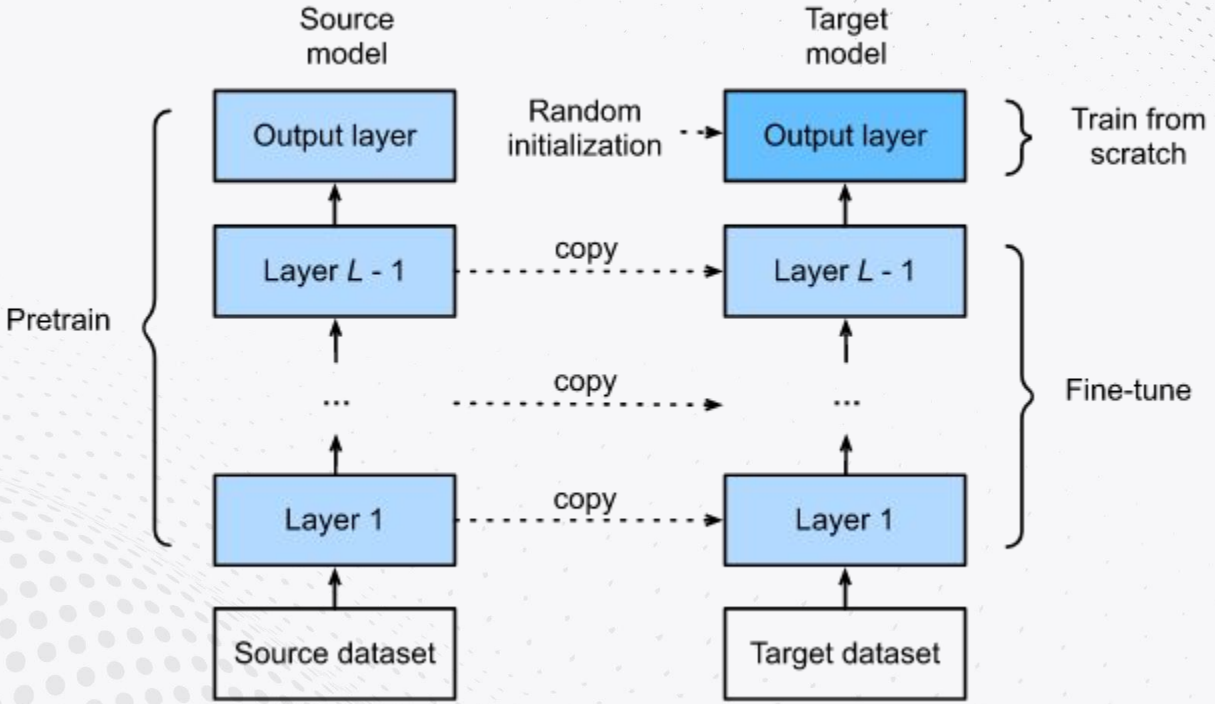
Domain shift



Domain Adaptation

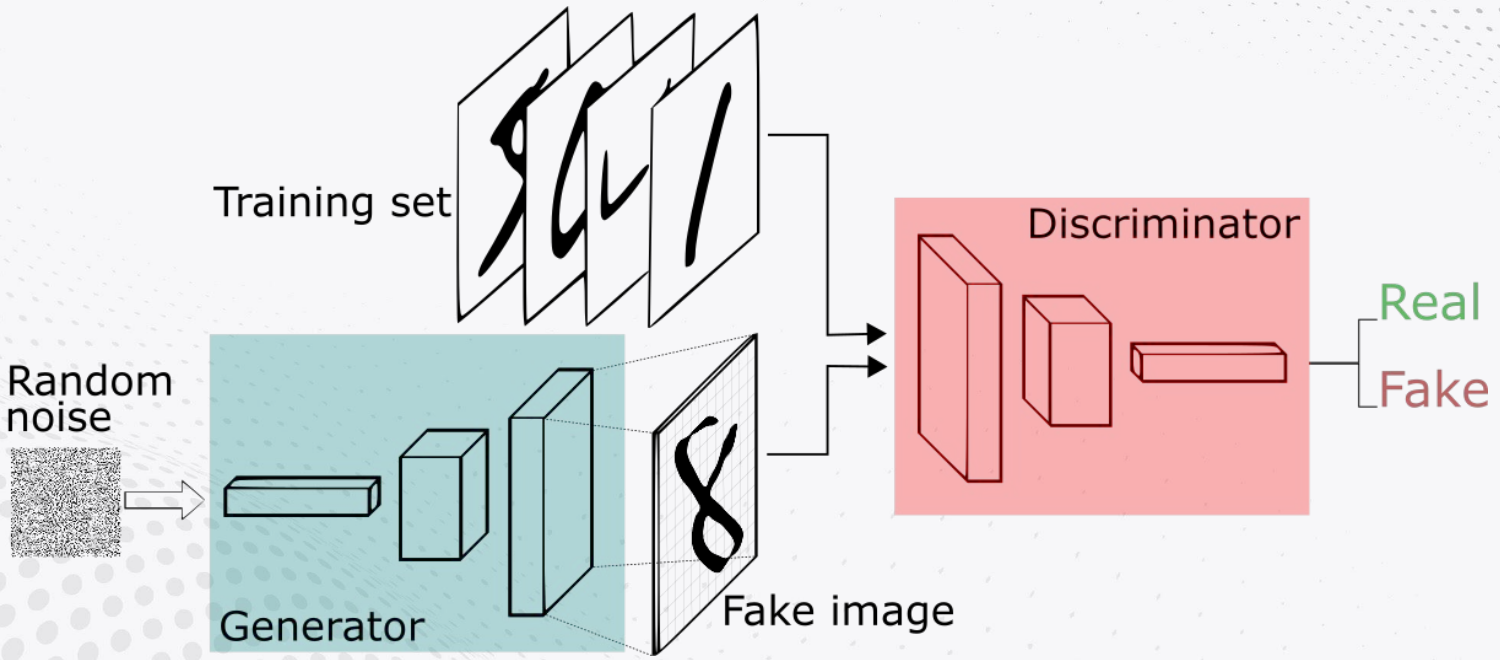


Naive Supervised DA: Fine-Tuning



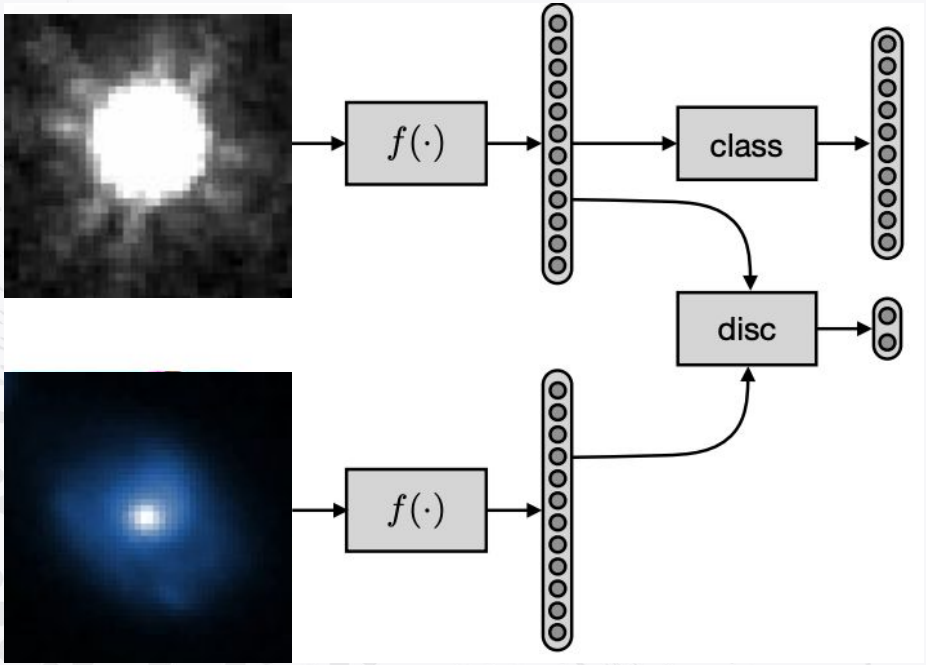
Yosinski et al. 2014

Adversarial Learning

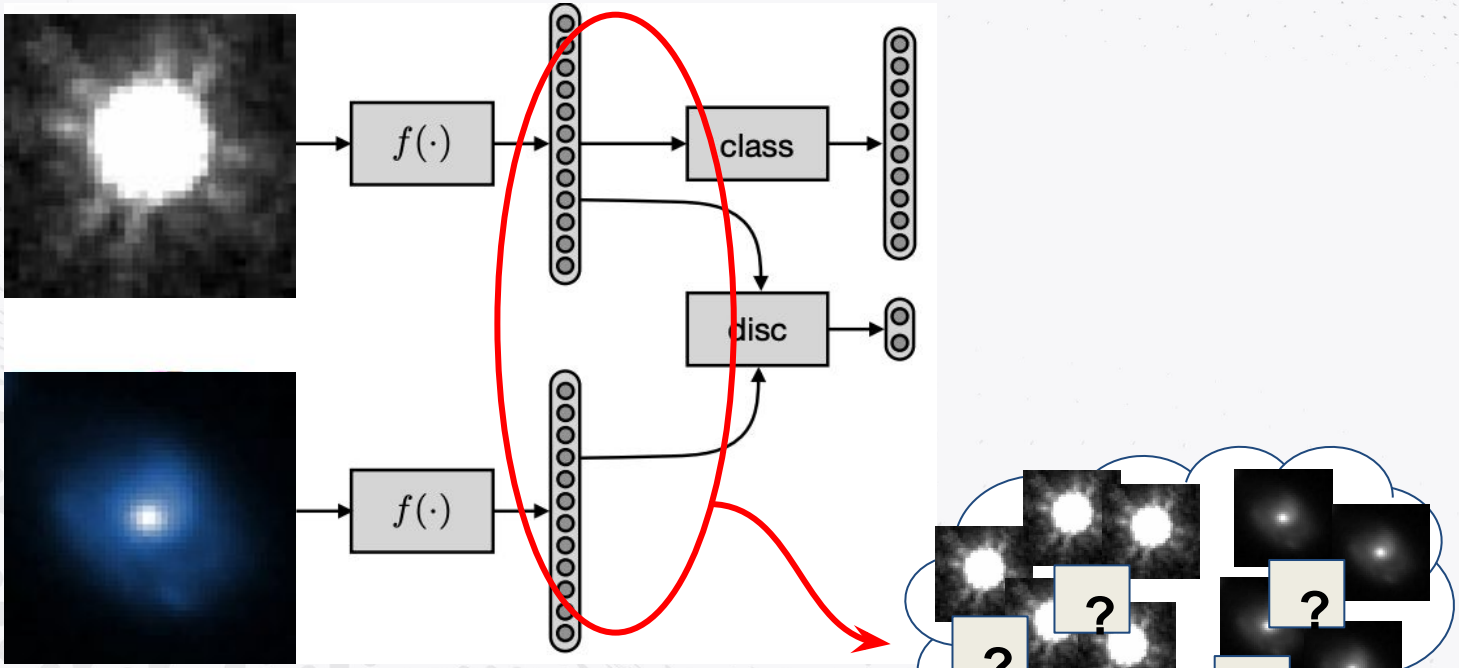


Goodfellow et al. 2014

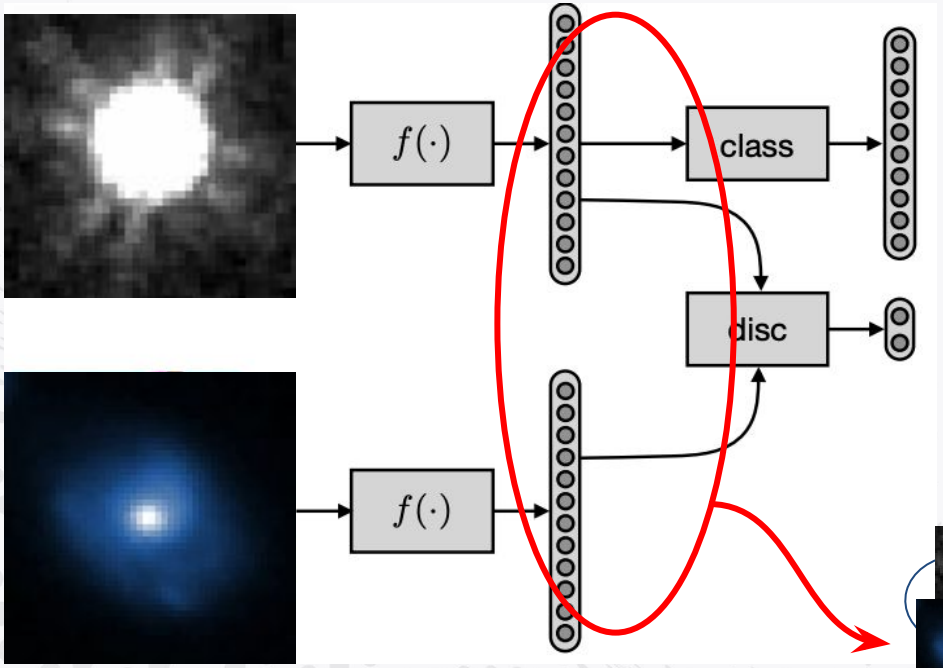
Unsupervised Domain Adaptation

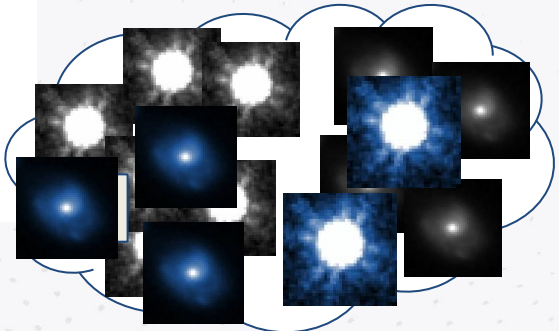


Unsupervised Domain Adaptation



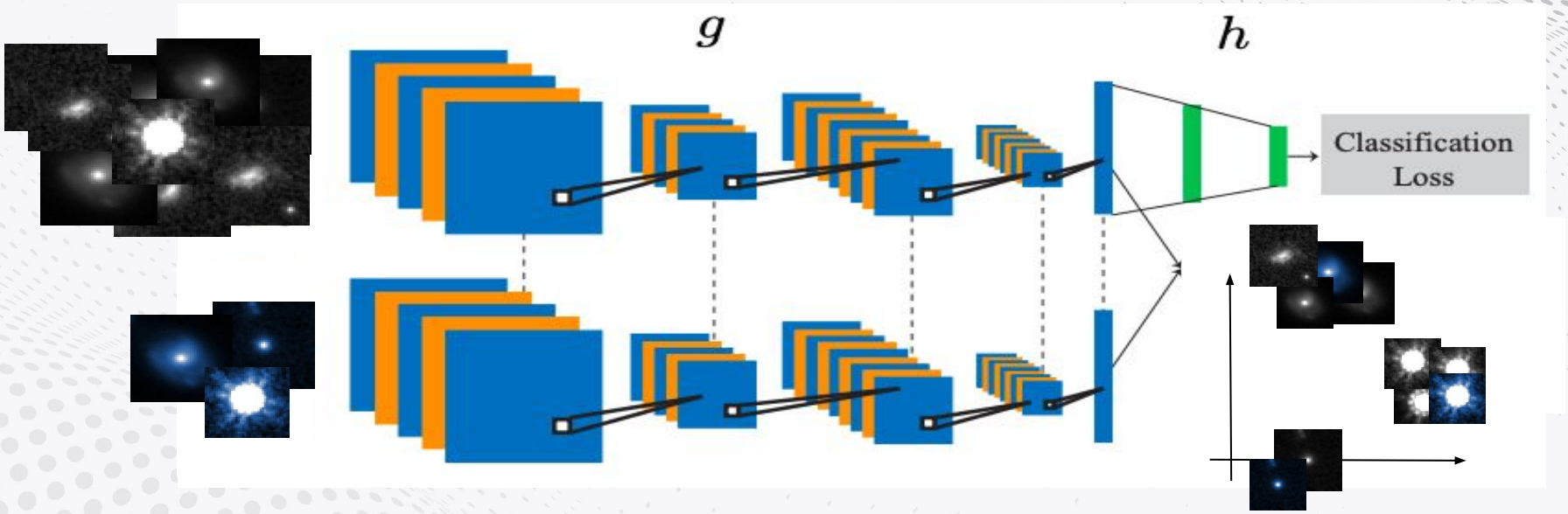
Unsupervised Domain Adaptation





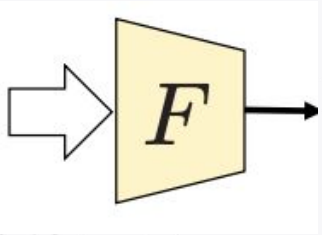
Ganin & Lempitsky et al. 2015

Supervised Domain Adaptation



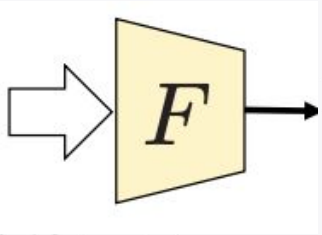
Mottian et al. 2017

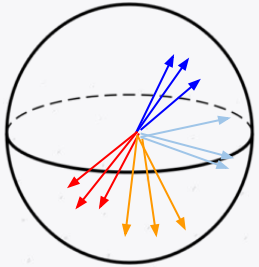
Semi-supervised Domain Adaptation



Saito et al. 2019

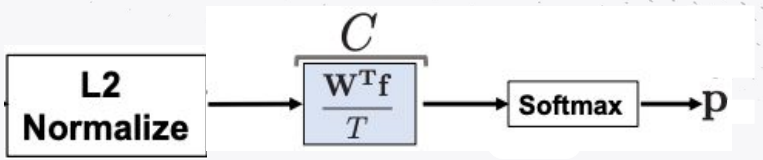
Semi-supervised Domain Adaptation

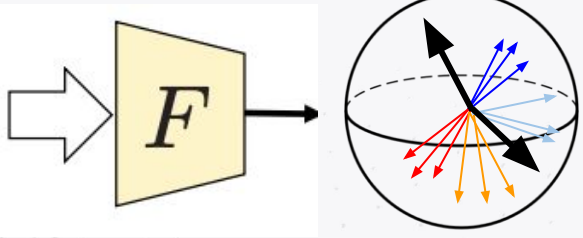




Saito et al. 2019

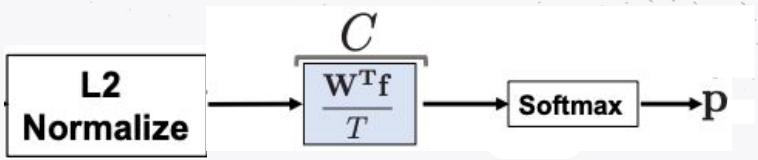
Semi-supervised Domain Adaptation

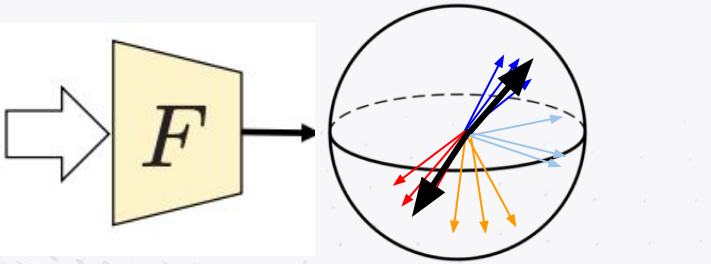




Saito et al. 2019

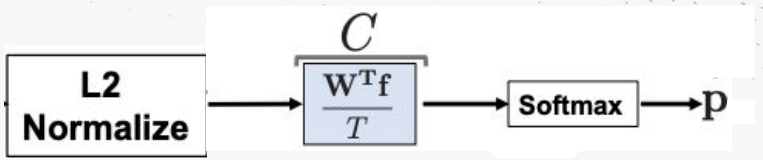
Semi-supervised Domain Adaptation

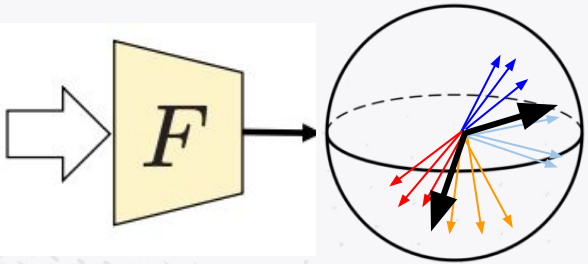


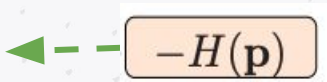


Saito et al. 2019

Semi-supervised Domain Adaptation

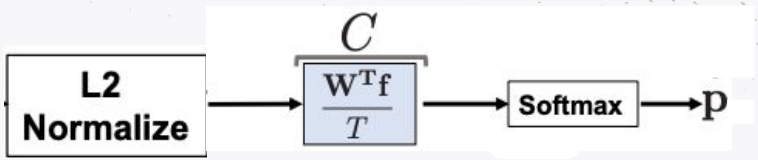


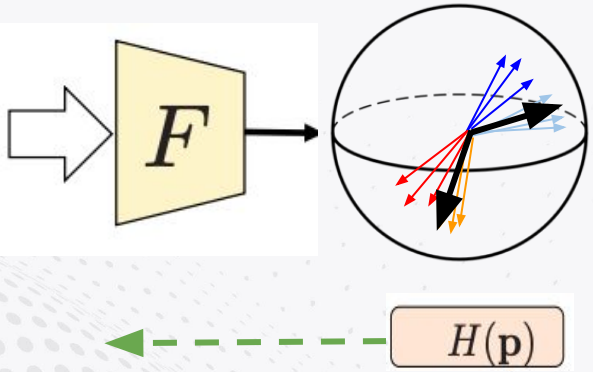




Saito et al. 2019

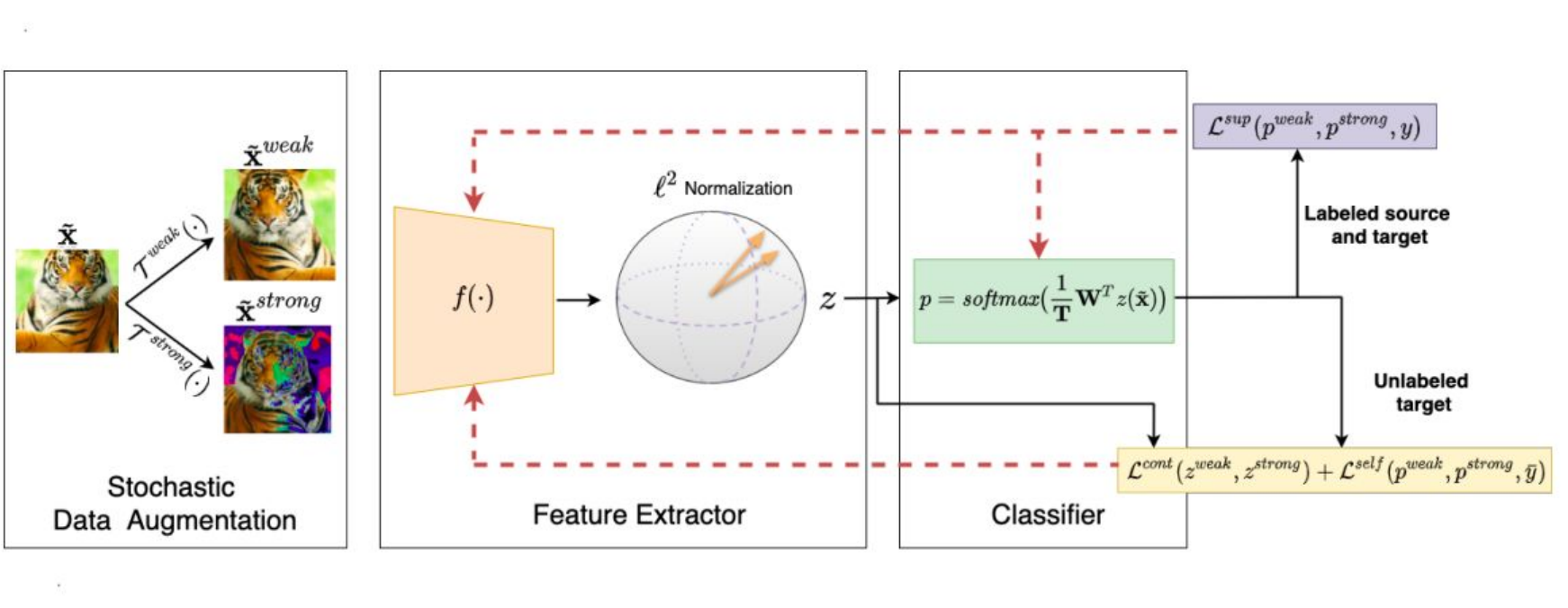
Semi-supervised Domain Adaptation





Saito et al. 2019

Other Idea



Perez-Carrasco et al. 2020

UNIDAD DE
DATA SCIENCE
UNIVERSIDAD DE CONCEPCIÓN