

How to do your Machine Learning Project well

M A R I N E E

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Introduce myself

- Applied Computer Engineering (2013 ~ 2019)
- Programming Career (2017.11 ~ present)
- Machine Learning & Pattern Recognition Lab
(2018.08 ~ 2019.12)
- MakinaRocks (ML Research Engineer, 2020.01 present)

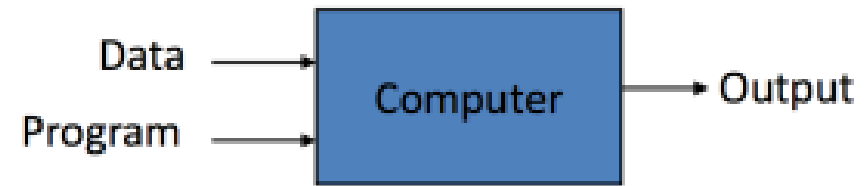
Motivation

- Machine Learning project를 제대로 한다는 것?
- 어떠한 접근태도를 취하면 좋을지를 고민해보았습니다.

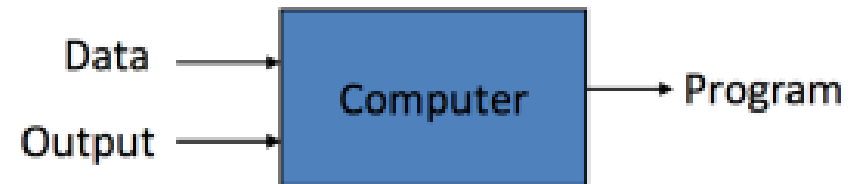
Introduce ML

Introduce ML

Traditional Programming



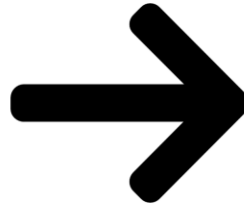
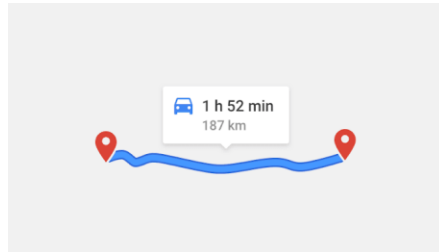
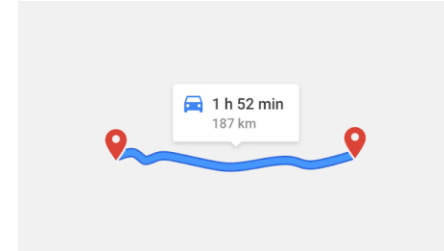
Machine Learning



Introduce ML



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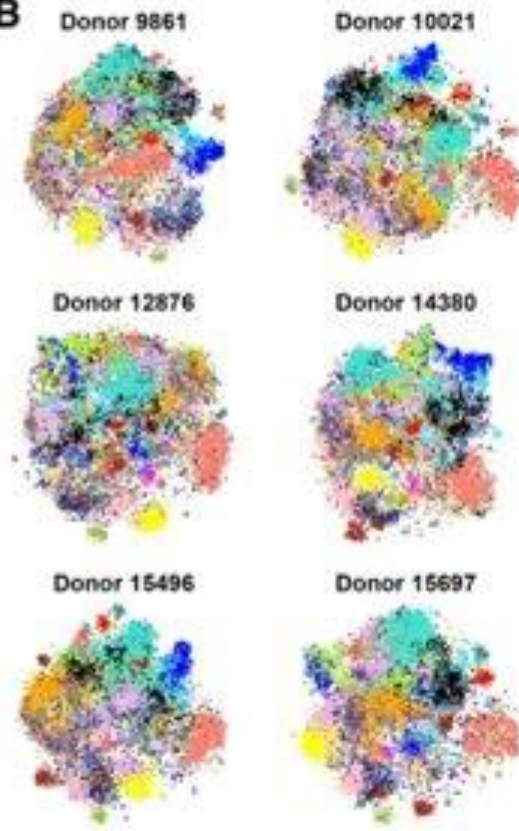


Introduce ML

A



B

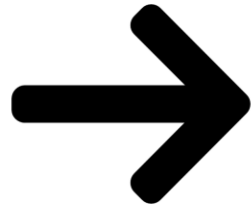


Introduce ML

- 머신러닝은 만능이 아닙니다!

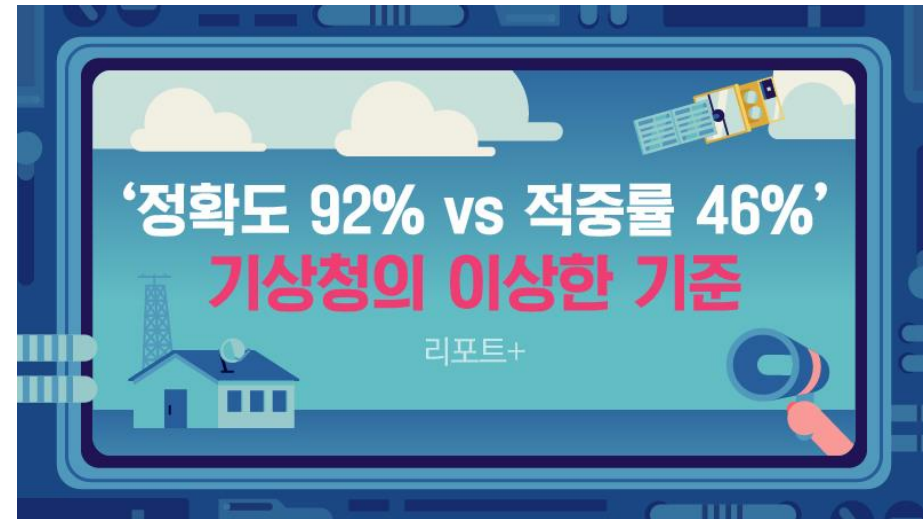
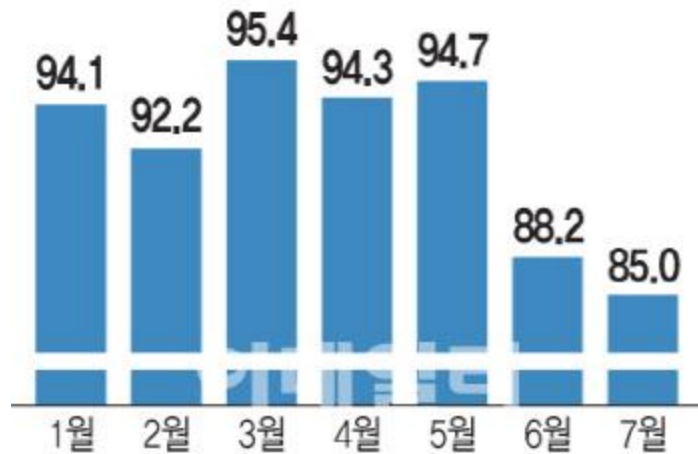
Introduce Project

Introduce Project



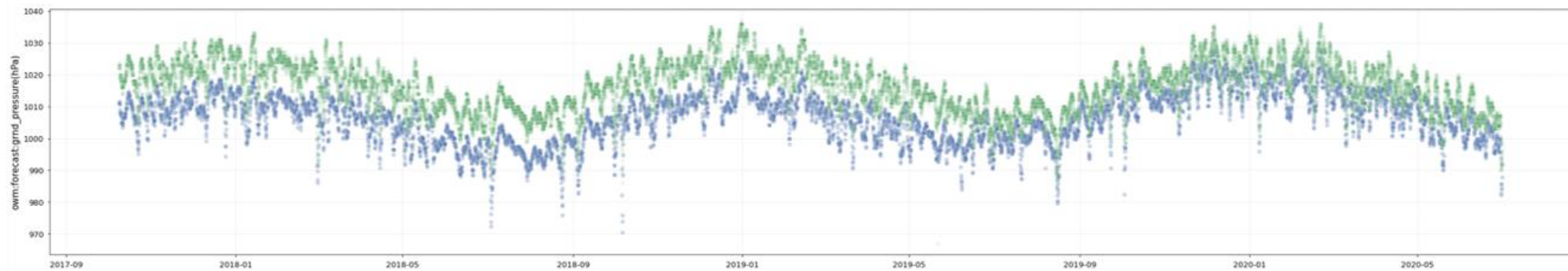
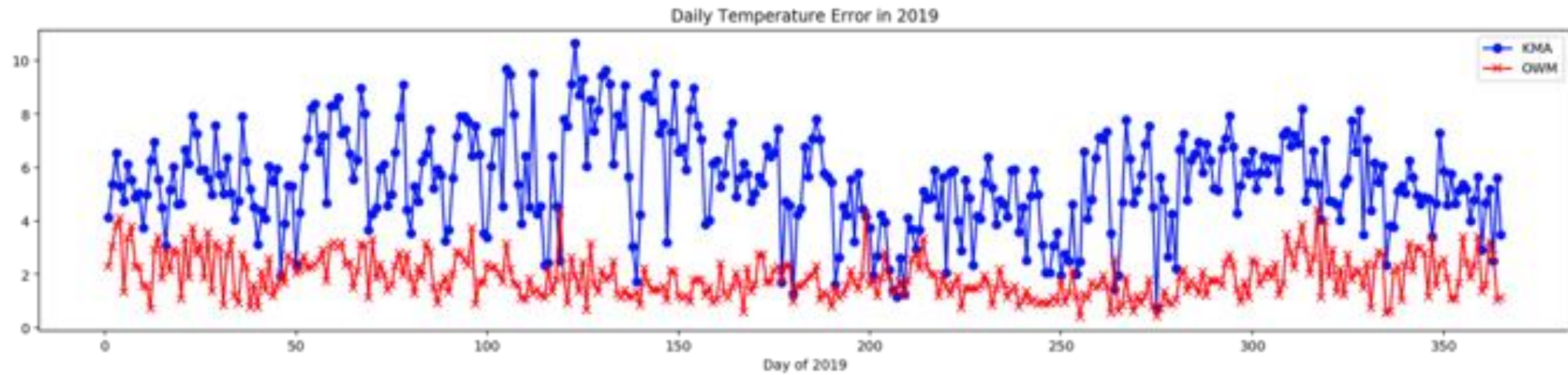
Introduce Project

기상청 월별 예보 정확도 현황 (단위:%)

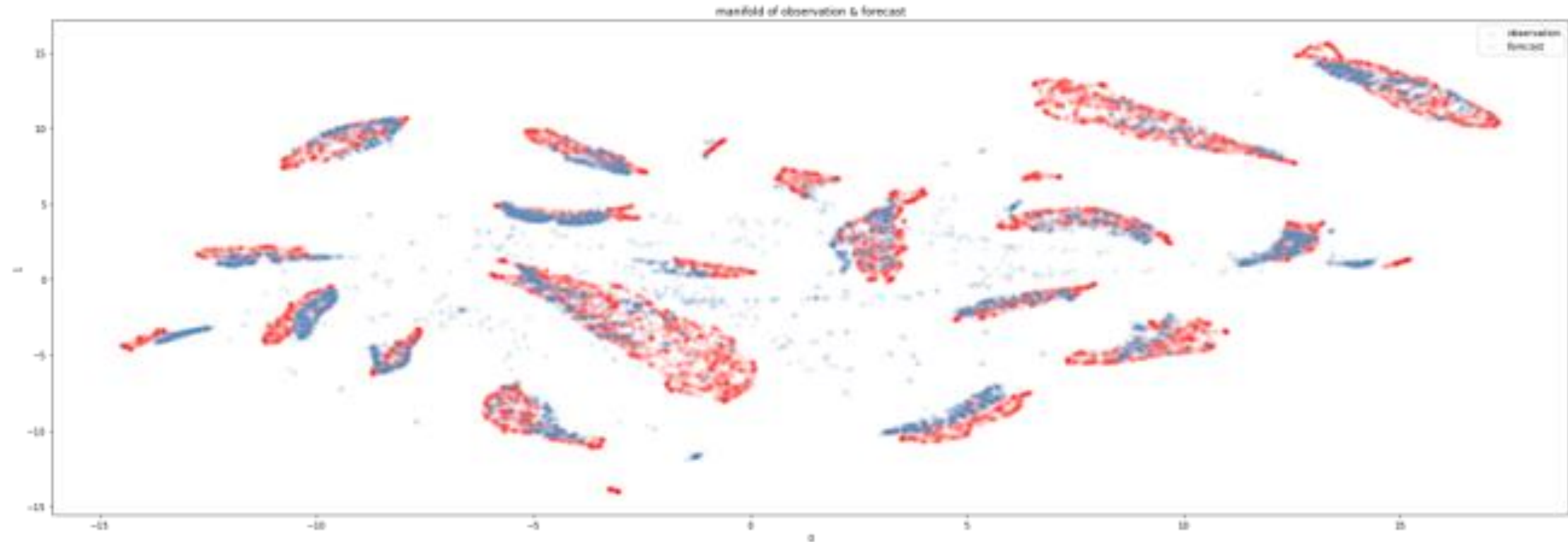


Data Analysis

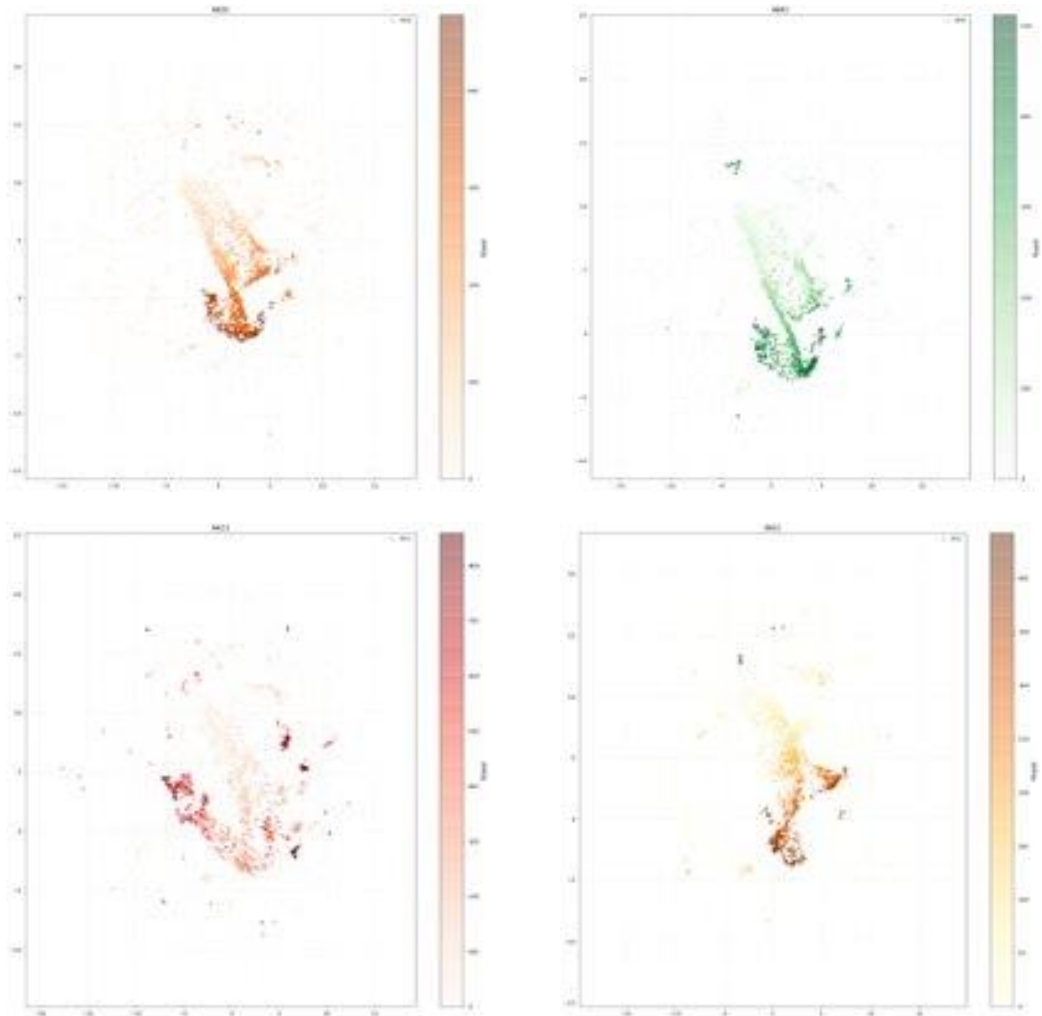
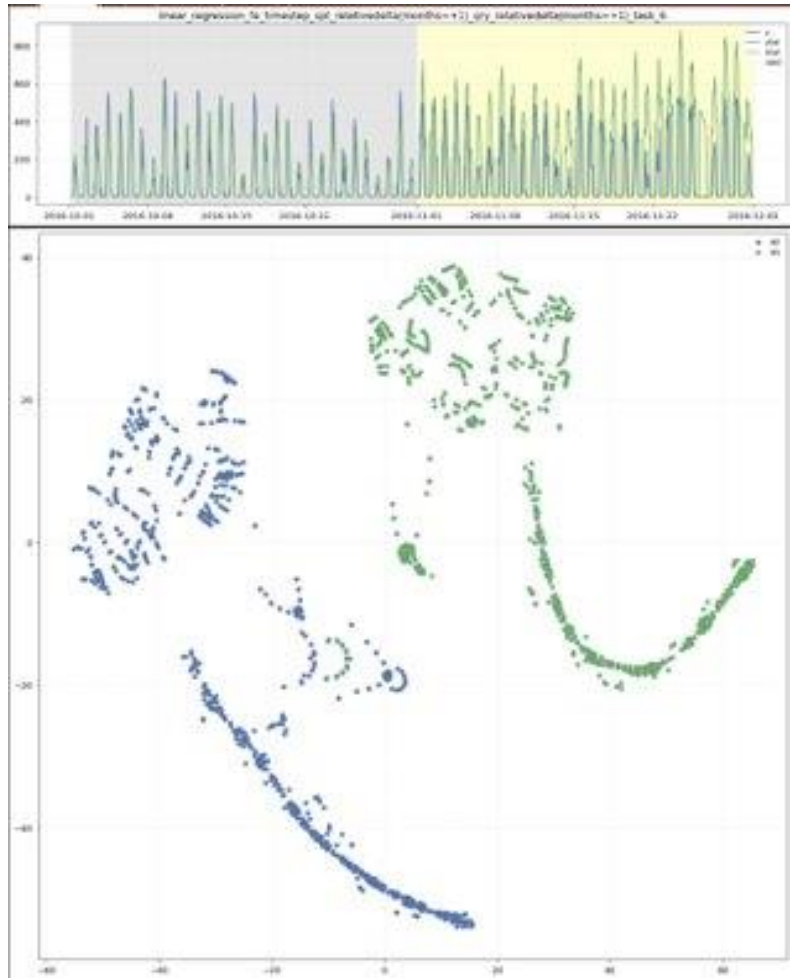
Data Analysis



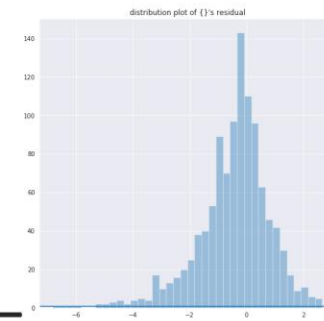
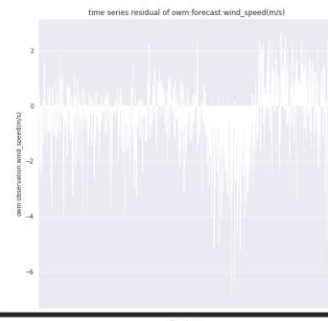
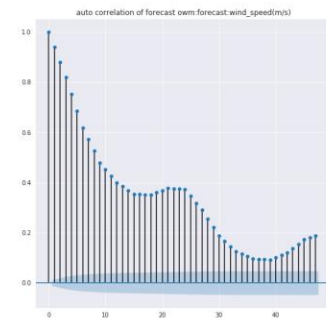
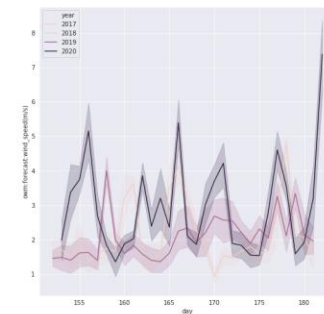
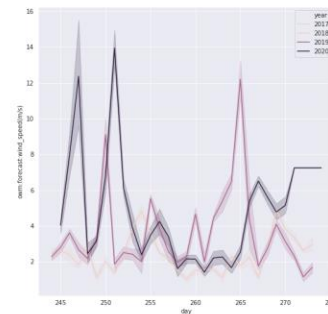
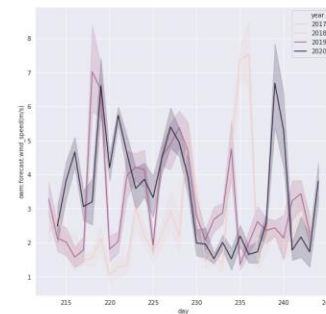
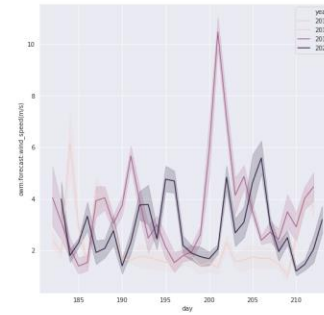
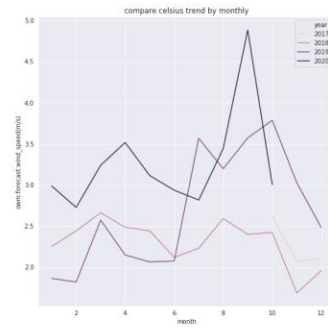
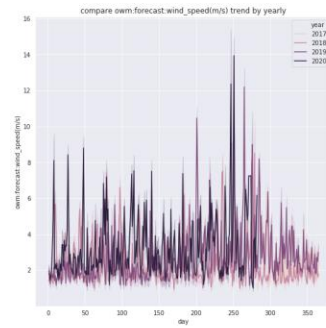
Data Analysis



Data Analysis



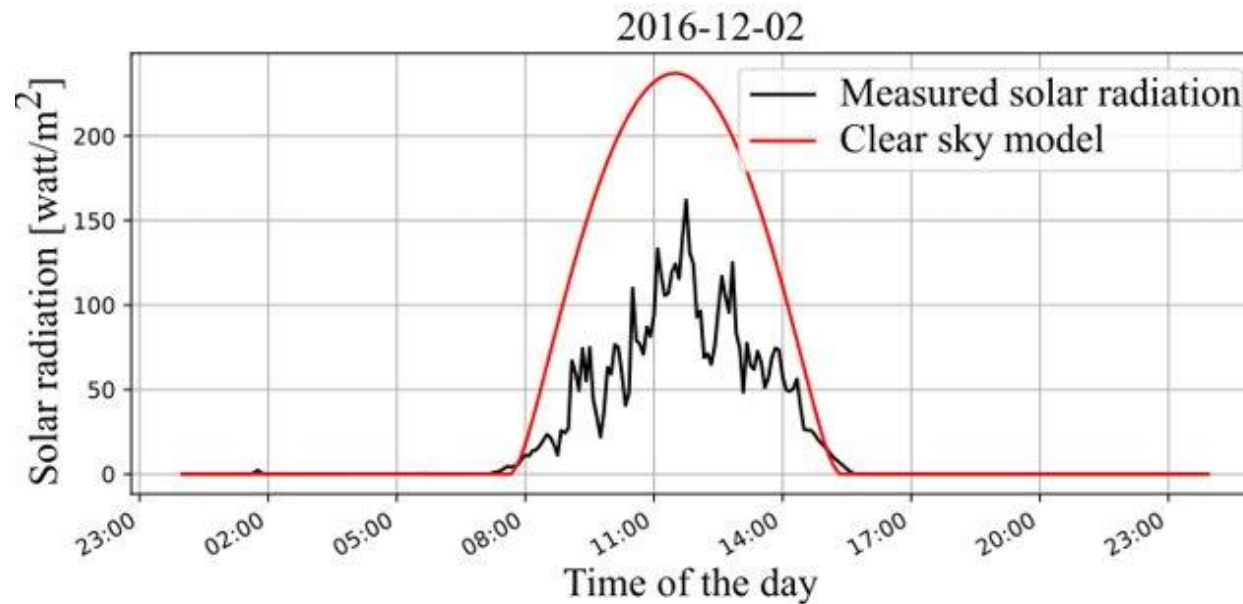
Data Analysis



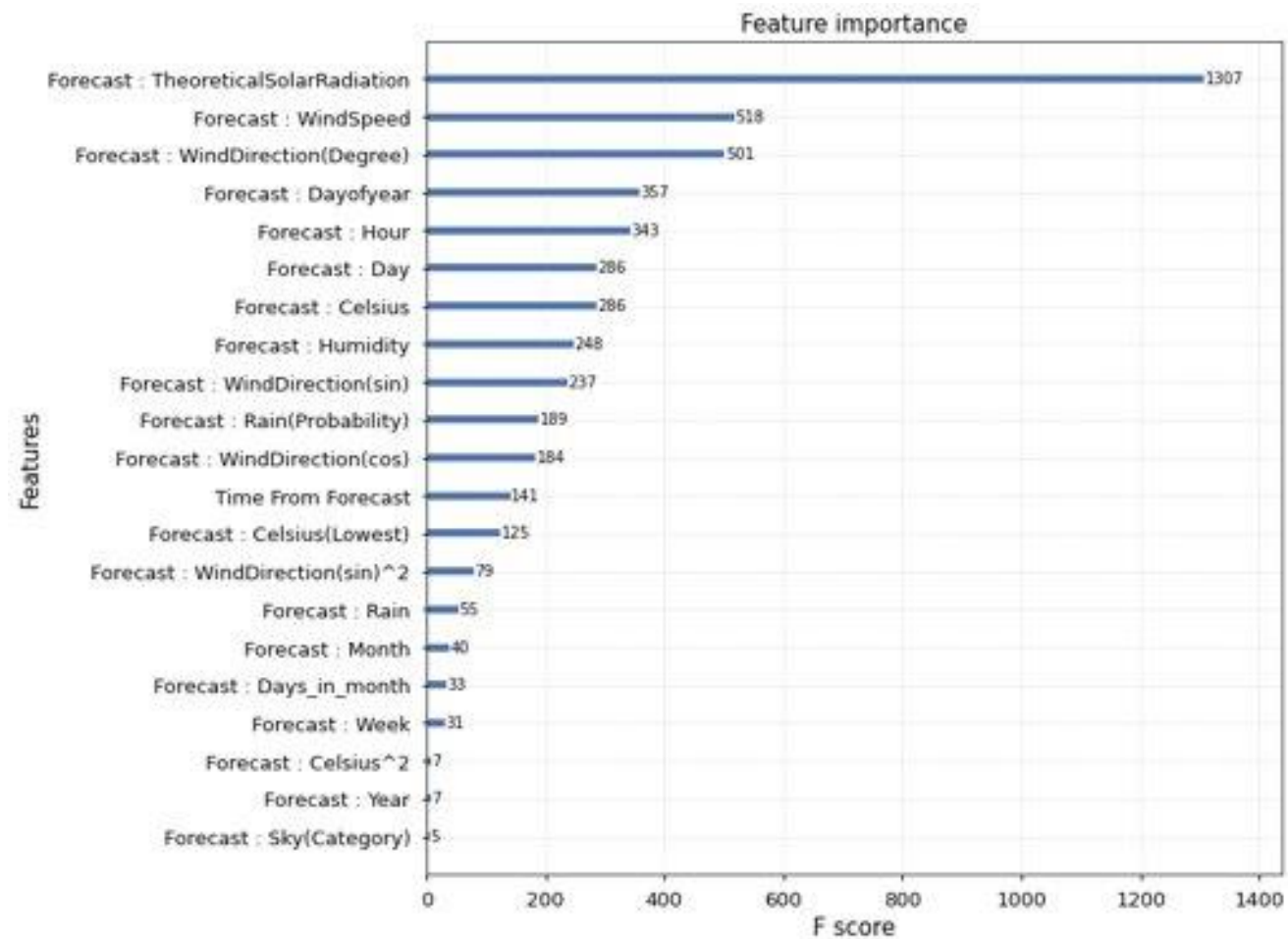
Feature Engineering

Feature engineering

- Domain knowledge + data에서 얻을 수 있는 insight



Feature engineering



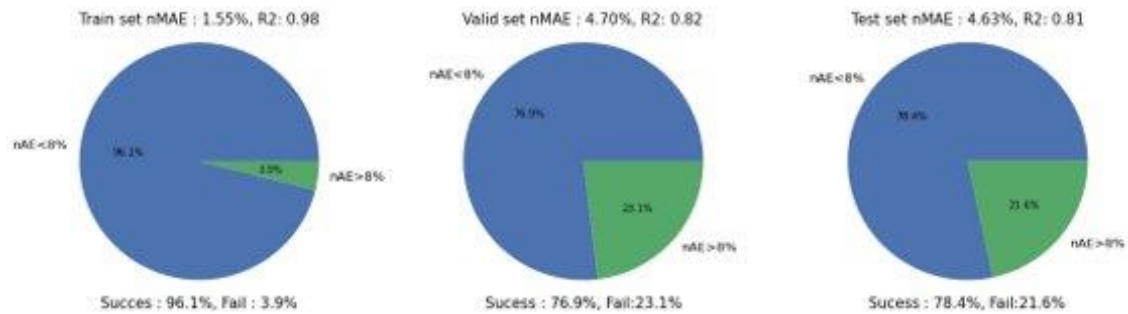
Modeling

Modeling

- PoC(proof of concept) with baseline model
- Improve model with DNN
- Deploy, delivery final model

Modeling

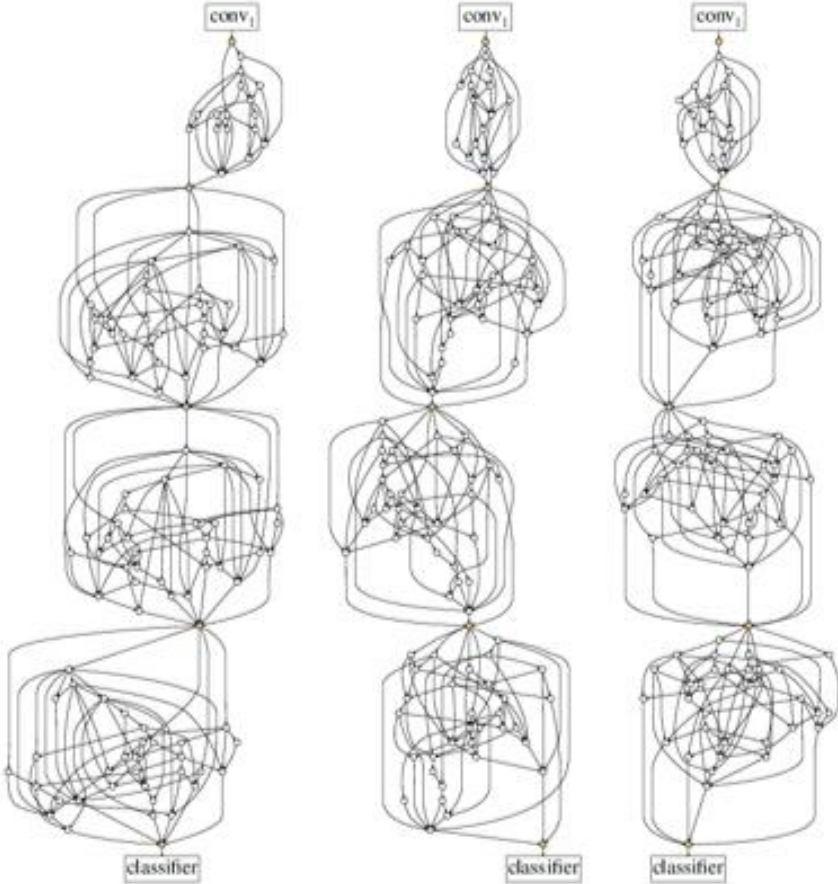
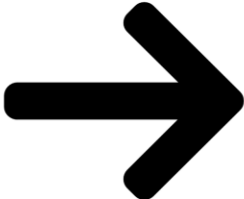
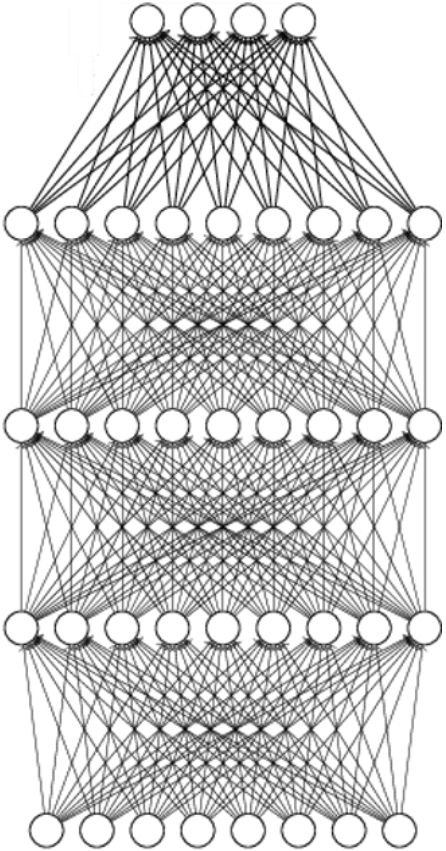
- PoC Model (XGBoost Regressor)



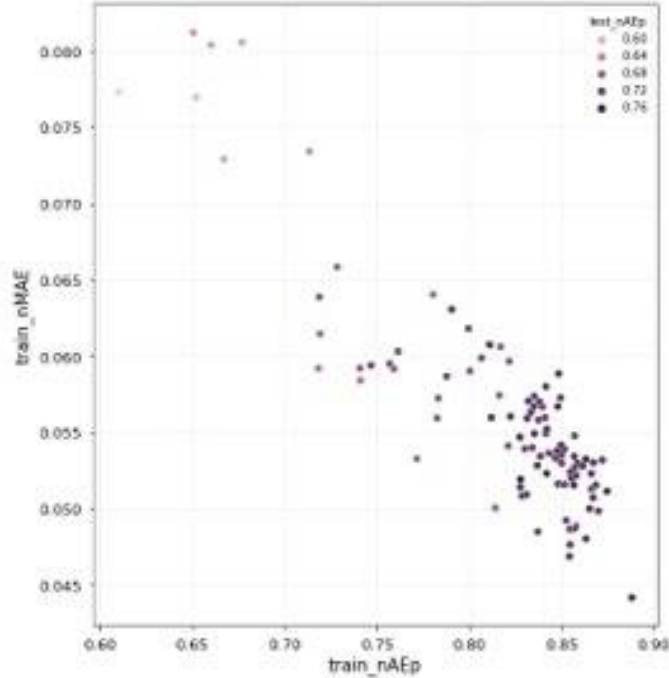
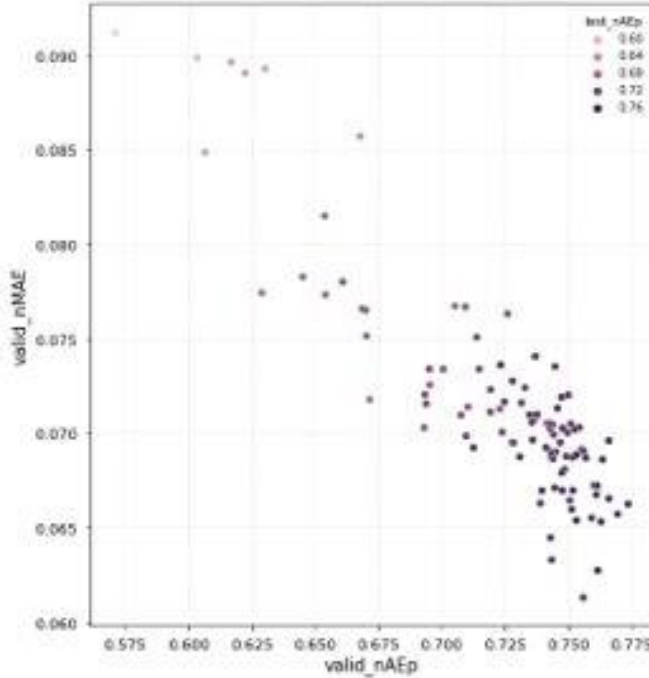
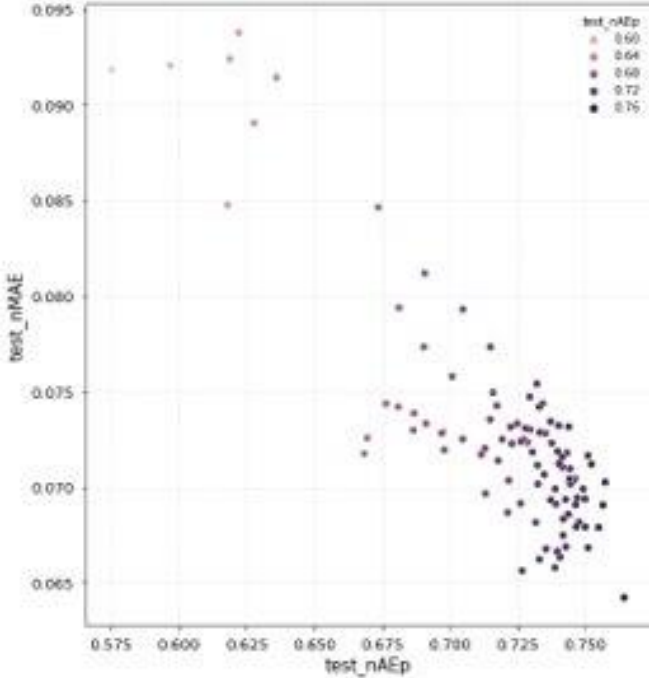
Modeling

- Improve model with DNN
 - Randomly Wired Neural-Net
 - Re-design obj.function + time-series ML model

Modeling

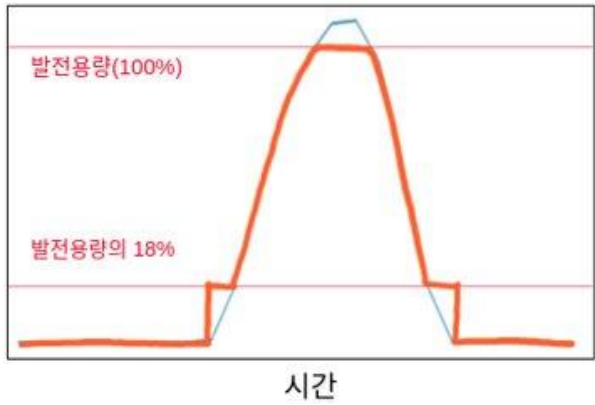
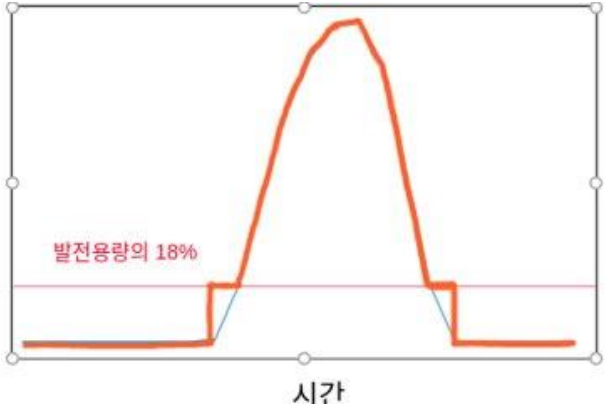
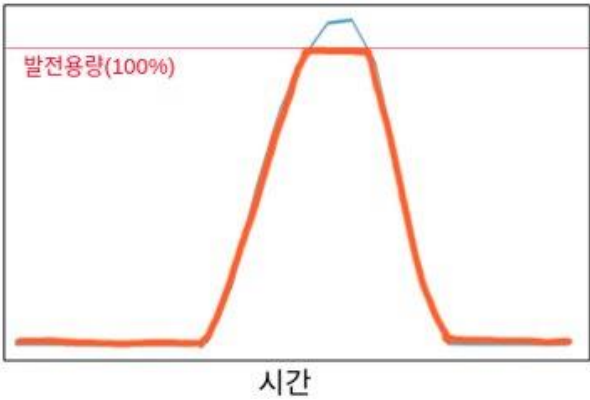
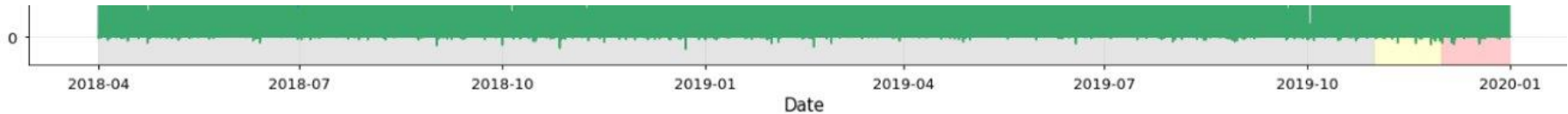


Modeling



Modeling

- Tricks



Project 회고

Project 회고

- EDA(exploratory data analysis)가 부족하게 느껴졌다.
- EDA가 부족하다보니, 모델링에 반영할 지식의 부재가 힘들었다.
- 실험 외적인 모든 조건이 정제되어 있는 kaggle, paper writing과 달리 사업으로 진행되는 machine learning process에 대한 직접적인 경험을 할 수 있었음.

Thank you!