

[UEH] Meeting 240322

Friday, March 22, 2024 7:45 PM

+ Tình hình hiện tại

Deep Learning VGG + Dice Score, TabNet

--> acc = 0.79, AUC = 0.76

--> gần bằng với random forest

SENet

Introduced by Hu et al. in [Squeeze-and-Excitation Networks](#)

A SENet is a convolutional neural network architecture that employs squeeze-and-excitation blocks to enable the network to perform dynamic channel-wise feature recalibration.

Source: [Squeeze-and-Excitation Networks](#)

[Read Paper](#)

[See Code](#)

Vấn đề:

+ Cơ chế Attention ? CBAM + SE Block

+ XAI for black model?

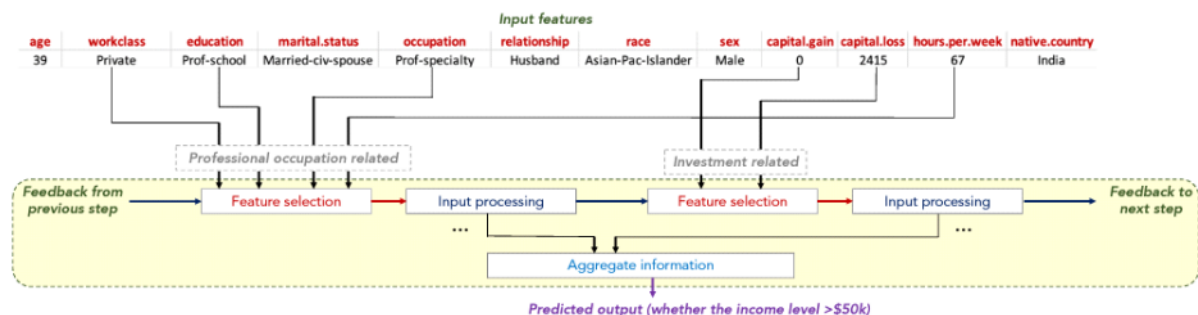
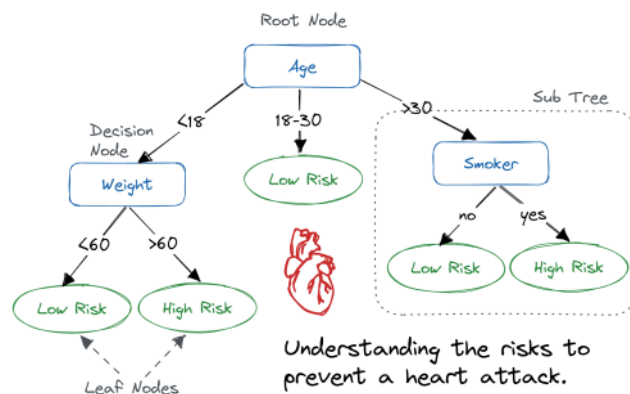
(Explainable AI, yếu tố nào là quan trọng để xác định rủi ro)

<https://codelearn.io/sharing/giai-ma-thuat-toan-lime-explainable-ai>

<https://github.com/marcotcr/lime> (nghiên cứu trước LIME)

XAI --> luật suy diễn --> tư vấn cho khách hàng yếu tố nào quan trọng dẫn tới kết luận?

+ TabNet --> biểu diễn luật kết hợp bằng các mặt nạ cột



Unsupervised pre-training

Age	Cap. gain	Education	Occupation	Gender	Relationship
53	200000	?	Exec-managerial	F	Wife
19	0	?	Farming-fishing	M	?
?	5000	Doctorate	Prof-specialty	M	Husband
25	?	?	Handlers-cleaners	F	Wife
59	300000	Bachelors	?	?	Husband
33	0	Bachelors	?	F	?
?	0	High-school	Armed-Forces	?	Husband

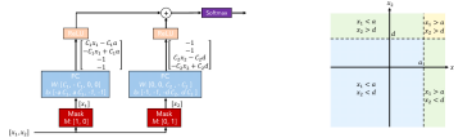


Figure 3: Illustration of DT-like classification using conventional DNN blocks (left) and the corresponding decision manifold (right). Relevant features are selected by using multiplicative sparse masks on inputs. The selected features are linearly transformed, and after a bias addition (to represent boundaries) ReLU performs region selection by zeroing the regions. Aggregation of multiple regions is based on addition. As C_1 and C_2 get larger, the decision boundary gets sharper.

Dice score + Focus Loss + Weighting Loss

```
def build_loss(w1, w2, w3):
    def loss(y_true, y_pred):
        return dice_score(y_true, y_pred)*w1+foco_score(y_true, y_pred)*w2
    +cat_score(y_true, y_pred)*w3
    pass
    return loss
    pass
my_loss = build_loss(w1, w2, w2)
```

+ Generative AI

+ Ứng dụng ở VN? **Financial Risk**

- * Documents --> ChatGPT (nhỏ) --> rút trích đặc trưng dùng Prompt
- * Phân tích rủi ro

Financial Documents -->