Portfolio

JuiYang, Wang

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Links

Project	Github	Dataset	Report	Slides
Brand Positioning	×	✓	Report	×
DL00	✓	×	×	×
AtmSci	×	×	×	✓
Sport	×	×	×	×
SPC	×	✓	×	×
FAI	×	×	×	×

Abstract

Welcome to my portfolio! In the past two years of university studying, I've accumulated extensive data analytics and data science training, including programming, statistics and machine learning. I am glad to have the chance to join the Data Analytics Club to learn more and develop industry standard skills. Throughout courses and self-learning projects, I have compiled a portfolio to demonstrate my professions.

1. Quantitative Analysis for Brand Positioning

Scraping, arranging data. BERT, PCA, k-means analysis. Finally, two useful business implications for the Taiwanese boba shop. The analytic framework can be used by consumer market players and marketing consulting firms to design competitive market or go-to-market strategies.

Problem Definition

- Can we measure what a brand convey on the media quantitatively?
- Do we know the competition landscape in a specific product market?
- Can we gain understanding of how a brand position evolves¿

Methods

BERT, dimension reduction techniques for visualization, clustering algorithms

Results

2. Deep Learning[0, 0]

This is my favorite side project where I try to reproduce common PyTorch API and implement forward and backward passes of neural layers on my own. It helps me learn the very foundation of deep learning and it can also be useful for others to learn. Snapshots and explanation of project structure.

Features

Implementations, functionality.

3. Machine Learning Application – Atmospheric Data Analytics

Though the project is not in the business field, I would still share it with you guys. In the project, I collaborated with a doctoral student in NTU IPCS, trying to leverage machine learning to do scientific research. Specifically, we developed a variational autoencoder(VAE) to analyze the intrinsic patterns under heat wave events in East Asia. Link of slides.

Problem Definition

three types of heat wave. EOF

Methods

VAE, beta, huber loss, TC

Results

visualization, latent traverse, interpretation

Miscellaneous Course Projects

In the section, I am showing you some of my interesting course works.

Statistical Process Control and Optimization

Paper air plane optimization. Factorial design, Central Composite Design and predictive model. Fraction of the self-collected and published dataset is shown below:

Test	Replicate	Fly	Tail	Head	Winglet	Flying Time
1	1	1	1	1	1	5.15
2	1	1	1	-1	1	2.1
3	1	1	1	1	-1	2.33
4	1	1	1	-1	-1	1.96

Machine Learning

LGBM, Feature engineering, elo rating. link of report

Foundations of Artificial Intelligence

Data + heuristics can be powerful. Link of report.