YATAI MIAO

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Homepage: https://miaoyatai.github.io/

EDUCATION

Tianjin Polytechnic University   **Tianjin - Xiqing**

BEng in Computer Science(Elite Class of Artificial Intelligence)   *Sep. 2016 - Present*

GPA: 3.56

CET-6: 439

HONORS

- the second prize of national competition area in CUMCM(China Undergraduate Mathematical Contest in Modeling) ,2018
- the first prize in MCM/ICM(Mathematical Contest In Modeling / Interdisciplinary Contest In Modeling),2019
- the second prize of national competition area in China Students Service Outsourcing Innovation and Enterpreneurship Competition,2019
- Three years of National encouragement scholarship and President's scholarship
- Honorary certificate of Merit student
- Honorary certificate of outstanding student cadre
- Honorary certificate of outstanding communist youth league member

RESEARCH INTERESTS

Machine Learning, Computer Vision, Image Processing, Deep Learning.

TECHNICAL STRENGTHS

Programing Language	Python, C, Java, Matlab
Programing Framework	Pytorch, TensorFlow
Github	https://github.com/miaoyatai

CORE COURSES

Machine Learning(86), Applied Statistics(94), Data Structure(85), Algorithm Design and Analysis(85), Professional Comprehensive Pratice(CV+NLP)(96), Major Internship(96), Software engineering(91), Numerical analysis(89)

EXPERIENCE

Based on machine learning, the recognition of quantum state image and the regression analysis of magnetic field value are realized   Tianjin

Project Manager   *May. 2019 - Oct. 2019*

· ●Based on the Pytorch framework, I established an appropriate convolutional neural network for feature extraction and classification recognition of quantum state images. I optimized and adjusted the convolutional network structures of VGG16, VGG19 and 8-layers built by myself to find the network structure with the best recognition effect. On this basis, the magnetic field value regression analysis is carried out to predict the information represented by the new quantum state image.

MCM/ICM   Tianjin

Team Captain   *Jun. 2019*

· • In the Louvre problem, I was mainly responsible for programming, and I was also responsible for the discussion and establishment of the model with another person.Aiming at the shortest evacuation time, we establish optimization models to obtain the emergency evacuation plan of the Louvre. With the minimum evacuation time as the optimization goal, we established the emergency evacuation model of the Louvre and obtained the evacuation plan. The evacuation model consists of three parts, including a moving time model based on cellular automaton, a time model of going up and down stairs and a waiting time model based on queuing theory.

CUMCM   Tianjin
Team Captain   *Sep. 2018*

· • In the intelligent RGV scheduling problem, I was mainly responsible for programming, and I was also responsible for the discussion and establishment of the model with another person. For a given intelligent machining system, we set up optimization models of single objective and multi-objective under three conditions – single operation, double operation and possible failure, and discussed dynamic scheduling of RGV.

Image classification is realized by depth residual network(ResNet)   Tianjin
Project Manager   *Sep. 2019 - Oct. 2019*

· • Based on the Pytorch framework, I built a deep residual network (ResNet), and conducted image classification experiments on Cifar10 and Cifar100 datasets respectively.Then continuously deepen the network to observe the model performance changes, find out resNet network deepening caused by the problem, and put forward the improvement plan.

MLA 2019   Tianjin
Student Volunteer   *Nov. 2019*

· • Attended a conference called The 17th China conference on machine learning and its applications,where I listened to the presentation of professors from universities all over China.

Image annotation   Tianjin
Project Manager   *May. 2019 - June. 2019*

· • Training and testing in the Flickr dataset based on the Pytorch framework.Firstly, CNN(ResNet) was used to extract features and encode the input image.Then RNN(LSTM is used in this experiment) is used to decode the encoded image.Meanwhile, Attention mechanism was introduced into the experiment (Soft Attention was adopted in this experiment).After extracting the image features, the image features and the predicted word information are input to RNN to calculate the hidden layer output.The advantage of this is that it can be used to indicate which parts of the image to focus on based on the predicted word information, rather than aimlessly focusing on the whole image.

Implement Machine Learning Algorithms Without Framework   Tianjin
Team Member   *Sep. 2018 - Dec. 2018*

· • Implemented some machine learning algorithims with pure Python on my own, including K-Means and AGNES Clustering, Bayesian Classification, Logistic Regression. ID3 Decision Tree and so on.
· • This experience not only gave me a better understanding of the importance of linear algebra for machine learning but also gave me a solid foundation in programming.