

MINGHUAN LIU

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EDUCATION

Southwest Jiaotong University (SWJTU)

Sep. 2015 - Jul. 2019 (expected)

B.S. in Computer Science and Technology

- Overall GPA: 3.84/4.0 Ranking: 1/98
- Key Lab of Cloud Computing and Intelligent Technology
- Advisor: Tianrui Li
- **Currently I am a pre-graduate student of Apex Lab. at Shanghai Jiaotong University supervised by Prof. WeinanZhang and Prof. Yong Yu**

RESEARCH EXPERIENCES

Generative Adversarial Exploration for Reinforcement Learning *Feb. 2019 - Apr. 2019*

Advisor: Prof. Weinan Zhang

- This work proposed a novel method for the exploration problem in Reinforcement Learning with Generative Adversarial Network
- As a main author, write the most of the paper
- Submitted to IJCAI19

Automatic Proofreading in Chinese: Detect and Correct Spelling Errors in Character-level with Deep Neural Networks *Apr. 2017 - Apr. 2018*

Advisor: Prof. Tianrui Li

- This study focused on automatic detection and correction spelling errors in Chinese text
- Proposed the candidate attentive checker and the double attentive checker, using confusion sets and attention mechanism

DATA MINING COMPETITION EXPERIENCE

TOP 5, Sports Analytics Challenge sponsored by PSG

Mar. 2019 - Apr. 2019

SOLO

- This task requires to predict the identity of a player who has performed certain actions as well as predictions about the team information and ball coordinates of the next event on that game
- I considered the above questions as 3 types: a Fine-grained Classification problem, a 2-class classification problem and a regression problem
- I made a lot of work on pre-processing the given data which is in xml format and is event-unit sequence data of different matches
- I proposed 2 solutions: a GBDT solution for the 2-class classification and the regression problem; a Deep Learning solution with RNN for the Fine-grained Classification, the 2-class classification and the regression problem
- This competition has no leaderboard and TOP 5 is the final stage of more than 3000 participants

TOP 5, Liver Cancer Imaging AI Diagnosis

Jan. 2019 - Mar. 2019

With the other three team mates

- This competition is to predict the tumor diagnosis given the desensitized CT data of numbers of patient
- We proposed 3D convolution network with Res-IBN Block, Batch Normalization and mixed 2D/3D Downsampling
- We set up a online tumor diagnosis system which can predict the condition of given CT data and make a model visualization using CAM to give the proof of diagnosis to help doctors locate the lesion as fast as possible

TOP 10, SCADA Data Missing Repair Competition

Jan. 2019 - Mar. 2019

With the other two team mates

- This task need a prediction of missing SCADA data, the meaning of data is desensitized
- We did temporal and spacial feature engineering and use ensemble model of GBDT, Decision Tree and designed interpolation methods

TOP 3, AI Challenger 2018 in Weather Forecasting

Oct. 2018 - Nov. 2018

With the other one team mates

- This competition requires to make the weather indicators prediction, containing the temperature, humidity and the wind speed
- We did feature engineering from temporal data and use a single GBDT model without ensemble to model the 3 indicators respectively

28 / 175, Guoneng Rixin Photovoltaic Power Forecast Contest

Oct. 2018 - Nov. 2018

With the other two team mates

- This task is to make the prediction of the photovoltaic power generation at certain time given the sensor data sampled from the environment
- We did feature engineering from temporal data and related variables, using a single GBDT model without ensemble
- The gap between us and the No.1 is only 0.02 on averaged mae evaluation metric

PROJECTS EXPERIENCE

StarCraftII Minigame AI

Jul. 2018 - Aug. 2018

Advisor: Lisen Mu, Jingchu Liu

- This is a work in Deecamp 2018, which gained Great Demo Award
- Use reward shapping and hierarchical reinforcement learning, gain higher results than benchmarks on minigame CollectMineralShards and BuildMarines

Verication Code Identification

Mar. 2017 - Apr. 2017

- A naive implementation of BP and CNN based on Numpy and Matlab

AWARDS & HONORS

National First Prize, China Undergraduate Mathematical Contest in Modeling 2017

Meritorious Winner, Mathematical Contest In Modeling 2017

Third Prize, ACM Programming Competition in Southwest Division of China. 2017

China National Scholarship 2016&2017

- The highest honor for undergraduates nationally by Ministry of Education of China

Tang Lixin Scholarship 2017

- Only 60 students the whole school (including the M.S and the Ph.D students)

IBM Scholarship 2017

- Only 3 students the whole school

SKILLS

Machine Learning: Pytorch, Tensorflow, Scikit-Learn, lightGBM

Programming Languages: Python, MATLAB, C / C++, Java, LATEX

Standard Tests: TOFEL(88 for now), CET-6(574), CET4(616)

Hobbies and Interests: Soccer Swimming