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 11, 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 coordidates 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 11 is semi-final

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 Identication *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