Shuo **Qu**

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EDUCATION BACKGROUND

Beihang University — *Beijing, China*

09/2017 - 06/2021

Degree: Bachelor of Engineering in Computer Science
Overall GPA: 3.44/4.0
Dual Degree: B.S in Mathematics

RESEARCH EXPERIENCE

The Implement and Design of Diabetes Medicine Recommendation System — *Beijing, China*

12/2018 - 05/2019

Beihang University ACT Laboratory **Advisor:** Dr.Jianxin Li
Description: To establish an intelligent system that can personalize the medicine therapeutic regimen by machine learning

- Consulted related papers to grasp methods of diabetes drugs recommended by machine learning
- Designed training data, wrote data processing script with python and realized data automatic processing
- Selected a suitable model from lstm, xgb and lgb models
- Tested the trained model with test set

ACADEMIC EXPERIENCE

MIPS Assemble Pipeline CPU Design — *Beijing, China*

09/2018 - 12/2018

Advisor: Xiaopeng Gao

- Analyzed instructions that needs to be realized and classified them
- Designed data paths for instructions, components, CPU parts, including PC, IM, Register, DM, ALU, etc. and realized these parts with Verilog
- Conducted CPU structure hierarchy, added pipeline registers, designed CPU controller to transmit control signal
- Adopted T_{use} and T_{new} models to avoid data hazard
- Wrote MIPS assembly program to test CPU on ISE software

Warehouse Management System — *Beijing, China*

09/2019 - 12/2019

Advisor: Bo Lang

- Analyzed requirements and needed functions, including user login, warehouse and product adding/deleting, product schedule, order and customer adding/delating, customer information management, orders chart display, etc.
- Developed the front end with react and its basic layout, designed resetful API
- Designed the back-end database, involving entity, entity property and relations among entities; and used mySQL to conserve data
- Developed the back end using Python(django) framework and wrote codes
- Used git to conduct version management and cooperative development, managed codes with github and updated new required functions on issue

COMPETITION EXPERIENCE

Market Segment Sales Predication Model of CCF BDCI Passenger Vehicles — *Beijing, China*

09/2019 - 11/2019

Role: Leader
Award: Top 3%
Objective: To predict the sales volume in the next 4 months of each province and vehicle module

- Analyzed the sales of 60 vehicle models in 22 provinces, and the search volume of each vehicle model in each province in the past 4 months
- Used sliding window to build feature, and calculate the correlation rate among variables and then remove low-correlation variable from feature
- Divided trained data into training set and testing set
- Used lstm, xgb, lgb models to train data and get the sales of next month

Fengru Cup Science and Technology Contest of Beihang University *Beijing, China*

11/2018 - 05/2019

Project: Automatic Annotation Generation Software for Java **Advisor:** Xu Wang
Role: Leader
Award: Third Award
Description: Annotations are automatically generated for Java through deep learning nlp programs, and integrated as a plugin for java IDE IDEA, which provides the function of automatically generating comments after IDEA user code

- Used web crawler to acquire 20G data of Java codes and annotation from Github by start rating for training
- Conducted data processing with Python, paired data by python, and separated training data from testing data
- Read relative papers, reproduced sequence2sequence model using pytorch
- Trained this model with training data on a distributed cluster to train fast
- Applied Java to package a plugin for IDEA, which could realize the automatic annotation

INTERNSHIP EXPERIENCE

Beijing SenseTime Co. Ltd. *Beijing, China*

03/2020 - 09/2020

Position: Intern Algorithm Engineer

- Was responsible to establish pipeline frame of deep learning which dispatch each specific functional stage such as image classification, object detection, and booster in mimic and nas
  - United the interface of distributed training including pytorch, single machine, and frame of company
  - Designed standard of input parameters of each stages supporting types of string, path, list and implemented in code
  - Wrote the documents of frame using tool of sphinx
  - Accomplished the unit test code of frame
- Completed the construction of docker of group
  - Built the image of docker supporting fundamental environment of deep learning including gcc, pytorch, cuda and other dependences
  - Deployed the nvidia-docker on the server supporting use of gpu in the container of docker
  - Built docker image for frame of image classification and object detection supporting reading trianing data from osg
- Completed the construction of CI of group
  - Configed gitlab-runner on the server
  - Completed the configuration file of CI supporting checking of code style, unit test, deployment of documents, and building docker image
- Read papers and made mimic algorithm appear
- Used mimic to enhance the accuracy of tracking tools

HONORS & AWARDS

2017 **National Scholarship for Encouragement,**
2018 **Second Prize,** Best Learning Scholarship of Beihang University
2018 **Second Prize,** Social Work Scholarship of Beihang University
2019 **Second Prize,** Science and Technology Contest Scholarship of Beihang University
2018 **Excellent Student Leader of Beihang University,**

PROFESSIONAL SKILLS

DevOps	Docker, CI
Back-end	Django, REST API
Front-end	Vue, HTML5, Javascript
Programming	Python, C/C++, Java, Typescript, LaTeX, SQL
Technical Skills	Git, Linux(ubuntu), Deep learning, slurm, ceph

EXTRACURRICULAR ACTIVITIES

Vice President of Student Union Innovation and Entrepreneurship Center

Member of Street Dance Club and Tennis of Beihang University from 09/2017 to 12/2018