

CHONG HU

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EDUCATION

Columbia University in the City of New York, NYC, US *August 2019 - May 2021 (expected)*
The Fu Foundation School of Engineer and Applied Science
Master of Science in Electrical Engineering
Shanghai Jiao Tong University (SJTU), Shanghai, China *September 2015 - August 2019*
UM-SJTU Joint Institute
Bachelor Degree in ECE; Minor in Data Science
Skills: Python, C, C++, R, Java, Julia, MATLAB, Verilog, L^AT_EX

PROJECTS

Graduation Design: HDR¹ Video Recovering Algorithm *August 2018 - December 2018*
Deputy Team Leader

Company Sponsor: OTC/SSG/Intel; Company Mentor: Zhao Juan, Intel; Academic Advisor: Long Yong

- Used hdrCNN model to train data to transform LDR to HDR, with different data enhancements and loss functions, eg, cosine loss, in order to reconstructed over exposed area and restored details in dark area
- Evaluated model performance using HDR-VDP v2 and obtained 20/100 more than traditional mathematical method
- Applied FFmpeg, OpenEXR to finish the transfer from LDR video to image and image to HDR video, and added meta data of HDR10 format and corresponding BT2020 curves

Course Project: Music Recommendation System Analyzed from MSD² *June 2019 - August 2019*
Team member

Academic advisor: Prof. Jing Liu, Prof. Manuel Charlemagne

- Extracted songs information from 160GB MSD and preprocessed data using hadoop and drill
- Built similar artist adjacent matrix using MapReduce in hadoop and Spark and compared two methods
- Used Naive Bayes to guide the scaling data and investigated features inside data using clustering methods
- Constructed the pipeline of music recommendation based on adjacent matrix and features

Course Project: Deep Learning Face Super-Resolution with Facial Prior *May 2019 - August 2019*
Team member

Academic advisor: Prof. Jiajia Luo

- Re-implemented FSRNet in TensorFlow to reconstruct face high resolution images
- Dealt with facial landmarks in Helen Dataset and generated and augmented data with different methods
- Illustrated the significance of using facial prior in face SR tasks with three metrics, MSE, SSIM, PSNR

Course Project: Model Analysis of Effect Factors on Rental Price *June 2018 - August 2018*
Individual Project; Academic advisor: Prof. Jing Liu

- Downloaded 958 Mb data from Airbnb and then cleaned, classified and processed data by R
- Used GAM and GLM to match and explain data; checked model assumptions, outliers, high leverage points and so on to achieve an excellent model effect

MCM/ICM: Problem B: Turnpike Toll Plaza Model Based on Queuing Theory *February 2017*
Team Leader

- Built inflow model and merging queue model to generate the incoming cars and calculate the throughput when vehicles exit the toll plazas
- Designed two new toll plazas: reversible plaza and separate plaza to improve the efficiency
- Used C++ to realize visualization and MATLAB to generate data and found solutions to different conditions

¹High Dynamical Range

²Million Song Dataset

WORK EXPERIENCE

MokaHR Company

December 2018 - April 2019

Algorithmic Intern, AI Group

Beijing

- Combined CTPN and CRNN and developed model to solve resume OCR problems (CN & EN) in TensorFlow
- Simplified Network Structure and sped up inference 2s out of 10s on average, within losing 2% accuracy.
- Adapted open source labeling software to mark text and made evaluation methods for different stages.
- Packaged model into web service using gunicorn and implemented service logic, such as cache, different levels of recognition.
- Improved 15% overall performance and about 200% QPS than the original third-party service

Beijing Infervision Company

January 2018 - May 2018

Algorithmic Intern, Modeling Group

Beijing

- Used and adjusted YOLOV2 and YOLOV3 under darknet frame and FPN under mxnet for illness detection on DR images
- Calculated anchor size and number in different methods for YOLO and combined three detection layers to improve accuracy by 5% roughly on tiny objects
- Utilized Focal Loss to replace original softmax function to care about cases with fewer samples and increase average accuracy by about 3%

ACTIVITIES

Deputy Director, Public Information Department, Student Union of UM-SJTU JI

July 2016 - July 2017

- Took charge of shooting posters and videos for publicity and composed articles to record the latest activities

Volunteer Teacher, Elementary School in Yunnan Province

December 2016 - January 2017

INTERESTS: Photography, Football