Xinzhe Deng

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Education

University of Illinois at Urbana-Champaign, IL   2019
MS: **Information Science**

Huazhong University of Science and Technology, Wuhan, China   2015
BS: **Applied Physics**

Skills

Languages: Python, R, SQL, Matlab, Go, C++
Frameworks: Sklearn, Tensorflow, Keras, Pytorch, Weka, OpenCV, SQL Developer
ML Algorithms: Linear/Non-Linear Regression, Logistic Regression, Regularization, Tree Models, Boosting, Kernel Method, Q-Learning, RNNs, CNNs, SVM, KNN, xgboost, Autoencoder, PCA

Experience

Beijing Institute of Technology   June 2016 to May 2017
Machine Learning Engineer (Computer Vision)
- Wrote a prototype for a real-time detection & tracking system of traffic signs by YOLO and OpenCV.
- Used Keras to develop CNN models for traffic symbol classification with 95% accuracy.
- Conducted real-time 3D reconstruction algorithms on a dual-camera platform.

Tsinghua University   August 2015 to May 2016
Data Scientist
- Developed a pipeline for automatic data collection, pre-processing and analysis on a laser platform.
- Built an AI system to automatically recognize laser patterns and optimize system.
- Co-wrote an academic article published in the Applied Physics B-lasers and Optics.

Project

Insurance Recommendation System (Tree models, Clustring, PCA, xgboost)
- Used supervised and unsupervised learning algorithms to classify different types of clients in insurance industry.
- Built a recommendation system for insurance industry and evaluated the model.
- Performed PCA and xgboost to evaluate and extract important features.

Gender Analysis based on Writing Styles (NLP, Lossa Regression, SQL)
- Built a pipeline to transform literatures to word vectors and analyze gender based on writing styles.
- Used NLTK, Weka and Sklearn for topic modeling and the analysis of the trend of hot words based on year and gender.

IDigite Recognizen (OpenCV, CNN, Kernal Method, KNN)
- Collaborated with the web development team and built a web-based digit recognizer for Chinese characters.
- Used a python crawler to collect Chinese characters from search engines.
- Built a character recognizer based on CNN with the accuracy of 98%

AQI Analysis (Python, Pandas, Bqplot, ipywidgets, Jupyternotebook)
- Collected data and joined data frames of AQI from 2008 to 2017.
- Used pandas to do correlation analysis between AQI data and concentrations of O-zone, CO, PM2.5 etc.
- Visualized interactive charts for the correlation and time-series results.
- Built a regression model based on the historical data to predict AQI changes in the future.