Yu Zhao
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Award

CHINESE MATHEMATICAL OLYMPIAD China
Participator. Bronze medalist. January 2013

Education

BOSTON UNIVERSITY Boston, MA
M.S. degree in Electrical and Computer Engineering. May 2019
Relevant Coursework: Introduction to Learning from Data, Advanced Data Structures, Cybersecurity.

SHANGHAI JIAOTONG UNIVERSITY Shanghai, China
B.A. degree in Electrical and Computer Engineering. August 2017

Experience

ALGORITHMS IN RECOMMENDATION SYSTEM PROJECT Boston, MA
Team Leader & Programmer Sep 2018 – Dec 2018

- Researched and evaluated different memory-based and model-based collaborative filtering algorithms in a book recommendation system.
- Cleaned up the original 10k by 53k data set with a sparsity of 99.82%. Extracted ten 48 by 35 small data sets with different sparsity from 35% to 80%.
- Used average rating as baseline. Built up Pearson correlation CF, cosine similarity CF, Naïve Bayes CF and Probabilistic Matrix Factorization CF with MATLAB.
- Examined and evaluated the result using four different algorithms, which shows that PMF algorithm has the best performance over the other algorithms. Result also shows that data missing not at random is an important factor in a recommendation system.

DRONE VULNERABILITY AND EXPLORATION PROJECT Boston, MA
Programmer Sep 2018 – Dec 2018

- Chose the DJI Tello drone as our target, which is controlled through WiFi.
- Used Kali Linux and WiFi adapter to do the WiFi reconnaissance, which captured all the packets between drone and its controller.
- Reverse engineered the Android apk with apktool, dex2jar and jd-gui. Found out how the instructions are encrypted.
- Wrote a python script to disconnect the flying drone from its original controller and took control of it.

CLASSIFICATION OF BRAZILIAN NAMES PROJECT Boston, MA
Team Leader & Programmer Feb 2018 – May 2018

- Built up three different algorithms to identify immigrants from Brazil in the United States using their full names as distinguishing features.
- Cleaned up the original data set with 60k data points. Programmed logistic regression algorithm and recurrent neural network with python.
- Came up with a novel method, which is converting the names into unique numbers and then use KNN algorithm to do the classification.
- Examined and evaluated the result, which shows that the logistic regression algorithm has the best accuracy of 89% with 6 minutes running time, while the KNN algorithm has the fastest running time of 5 seconds with 83% accuracy.

INTRODUCTION TO LEARNING FROM DATA Boston, MA
Grader Feb 2019 – May 2019

- Graded students' assignments and examination paper.
- Helped other teaching assistants to hold the office hour and recitation class.

Technical Skills

Programming: C, C++, C#, Perl, Python, MATLAB, JavaScript.
Operating Systems: Windows 10 / 8 / 7, MAC OS X, Linux.