CONG PENG

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SKILLS:

Programming: Java, Python, JavaScript (React Native), C++, PHP, HTML/CSS, MATLAB, MongoDB/MySQL

EDUCATION:

University of California, Los Angeles (UCLA) *Apr. 2018 (expected)*

- Electrical & Computer Engineering, Signals & Systems (current GPA: 3.6/4)

Beijing University of Posts and Telecommunications, Beijing, China *Sep. 2012 – Jul. 2016*

- Electrical & Computer Engineering (major GPA: 88/100)

Instituto Superior Técnico, Lisboa, Portugal *Feb. 2015 – Jun. 2015*

- Electrical and Computer Engineering

WORK EXPERIENCE:

Data Mining Intern, PingAn Tech, Shanghai (Python, Django, MongoDB & Selenium) *Jul. 2017 – Sep. 2017*

- Implemented a web crawler based on Scrapy, which can crawl information from Chinese main social network: (1)Weibo, (2)Baidu Headlines, (3)WeChat Headlines and (4)Baidu Index which are formatted in JSON and displayed on Django Server.
- Dealt with requests from HTML content by BeautifulSoup and Xpath and smoothly handled redirecting, logging captcha verification (OCR), gesture verification issues with Selenium and analyzed raw content from news based on sentimental analysis.
- The result of (1) is fed as the input of the recommendation system for further interest classification. The results of (2), (3), (4) are part of framework of Big Data platform. The result of (4) is part of the demo in evaluating the feedback of certain company.

Research Assistant, Institute of Network, Tsinghua University, China *Nov. 2015 – May. 2016*

Undergraduate Dissertation Project: Advanced Algorithm Analysis on Wi-Fi Locating Based on Automatic Path Tracking

- Implemented K-means clustering algorithm to learn features of actual human trajectories from the data collected by Zootracer.
- Analyzed from the data and summarized 3 important patterns along the human trajectories, set a criterion for further evaluation in localization and revised the localization trajectory with given pattern rules.
- Improved localization accuracy according to a well-defined localization algorithm by overall 10%.

PROJECTS:

iOS React Native Mobile Application Development (JavaScript, React Native) *Apr. 2017 – Jun. 2017*

- Modified the existing user interfaces and designed some styled and fitted interfaces for the Mobile App.
- Interacted with backend to fetch the data from the database and display the information requested by the users, including searching for nearby restaurant, show the menu of some restaurant, comparing the menu etc.
- Implemented several useful components (buttons, bars, links) to let users better interact with the App.

Dynamic Universal Software System Visualization Kit (C++, Python & JavaScript) *Apr. 2017 – Jun. 2017*

- Static analyzer: implemented a parser to analyze the codebase into intermediate representation module (JSON format). (C++)
- Intermediate Representation Module: designed this module to take the input from the parser, upload the JSON format result to Django server and feed it to the Attribute Extractor. PageRank is also applied to provide information based on usage dependency.
- Attribute Extractor: built this query-able module to extract the desired visualization metrics (total lines of code, number of methods and number of fields) to the plotter module. This module provides search option to quickly locate target function.
- Plotter: implemented 5 different plots (Hierarchy Tree, Sunburst, Edge Bundling, Circle Packing and PageRank) to visualize the software infrastructure with D3.js.

Large-Scale Data Mining: Models and Algorithms (Python & MATLAB) *Jan. 2017 – Mar. 2017*

- Regression Analysis: Implemented Regression Models (Linear, Ridge, Logistic, and Polynomial Regression, etc.) on network backup & housing dataset, handling over-fitting by K-fold cross validation and different regularization methods.
- Classification & Clustering Analysis: Implemented text data modeling and feature extraction strategies (TFxIDF, LSI, PCA etc.) on '20 Newsgroups' dataset with various learning algorithms. (K-means, soft margin SVM, Naïve Bayes, logistic regression)
- Collaborative Filtering: Implemented collaborative filtering with Alternating Least Squares to build a recommendation system on the 'MovieLens' dataset with a volume of 100,000 movie rating data. (Matrix Factorization in MATLAB & NMF in Python)

Relational Database Management Design (C++, SQL, PHP & HTML) *Sep. 2016 – Dec. 2016*

- Designed several required SQL queries on given Movie Database with desire speed and efficiency.
- Built an open-ended Movie Database system allowing the user to search for the information of Movies and Actors through a Web interface. (SQL, Web application)
- Bruinbase Design: implemented B+ tree index on Bruinbase which can efficiently retrieve the information from the database.