Hong Fan

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Objective

Software developer in field of database and large scale distributed system.

Programmer in field of data analysis, deep learning algorithm.

Course Projects

- **Twitter Analytics on the Cloud**

  Course: Cloud Computing *Fall 2015*
    - Built the front end system of web service which accepts RESTful requests and send back responses.
    - Loaded Twitter dataset into database using the extract, transform and load process in data warehousing.
    - Built the back end system using both HBase and MySQL, which is able to store whatever data we need to satisfy the query requests.

- **Image Classification with Convolutional Multinomial Logistic Regression**

  Course: Machine Learning *Fall 2014*
    - Used ZCA-whitening and convolution for feature extraction.
    - Introduced Density-based K-means for feature definition and image classification.
    - Combined logistic regression to vote for final classification

- **Step Counter**

  Course: Data Acquisition *Fall 2014*
    - Built Sound Control System using microphone.
    - Built Step Counter using gravity sensor and accelerometer.

- **Soccer Bet Analysis System**

  Course: Python Prototype *Fall 2014*
    - Built a Crawler to get handicap information from betting websites
    - Built a Database to store history records and player information
    - Designed an Algorithm to calculate winning rate and score of matches using team records and handicap information
    - Built User Interface to display estimated result of match and history records of teams

Work Experience

- **Mobility Data Analysis Center** Carnegie Mellon University, PA

  Power of 32 Regional Traveler Information System, Incidence Part *Sept 2014 - Apr. 2015*

  System Programmer
    - Extracted data from several sources, transformed and loaded data into MySQL database.
    - Trained an estimation model to calculate incident risk
    - Built the front end website to provide historical data and estimation for clients.

- **Laboratory of Automation** Tsinghua University

  iLab Platform *Nov. 2013 - June. 2014*

  System Administrator, Programmer
    - Construct Server to receive signal from supervising camera, send camera signal to client, interact with client, send one-step control signal to equipment and load controlling codes to microcontroller on equipment.
    - Built website client to receive supervising signal, send one-step control signal, and upload controlling codes to server.
    - Designed and built experimental system of mini inverted pendulum, which could be controlled remotely from client.

- **Intelligent Transportation Research Group**   Rensselaer Polytechnic Institute
  Research Assistant   *June. 2013 - Sept. 2013*
    - Researched on penetration requirement for signalized intersection performance measurement.
    - Validated algorithm on KICHIJOJI network dataset of Japan
    - Analysed Data of freight transportation

Education

- **Carnegie Mellon University**   Pittsburgh, PA
  M.S. in Intelligent Transportation   *Aug. 2014 - Dec. 2015*
- **Tsinghua University**   Beijing, China
  B.S. in Automation   *Aug. 2010 - July. 2014*

Skills

Languages: C/C++/C#, Java, Python, SQL, AWK, HTML, verilog/VHDL

Operating Systems: Linux/UNIX, Windows, Mac OS X

Development Tools: Visual Studio, Eclipse, vim, Unity, Modelism, QuatusII, Labview, Matlab

Database: MySQL, HBase, DynamoDB, MangoDB

Cloud Provider: AWS, Openstack

Related Courses

CMU: Cloud Computing, Algorithms and Advanced Data Structures, Introduction to Computer System, Probability Model and Stochastic Processes, Methods of Optimization, Introduction to Machine Learning, Data Mining, Machine Learning with Large Datasets

THU: Data Structure, Computer Network, Computer Principles, System and Signal, Digital Electronic, Analog Electronic, Artificial Intelligence, Pattern Recognition