Fei Liang

3401 Iron Point Dr, San Jose, CA 95134, USA
Tel: (314) 435-5113; Email: liangfei@wustl.edu

EDUCATION

Master of Computer Science

Washington university in St. Louis, St. Louis MO, USA — September 2015 – May 2017

- Concentration: Software Development, Data Science
- Relevant Coursework: Advanced Algorithms, Machine Learning, Data Mining, Bayesian Methods in Machine Learning, Multi-Agent Systems, Cloud Computing with Big Data Applications, Database Management Systems, Video Game Programming, Mobile Application Development, Introduction to Artificial Intelligence
- GPA: 3.40/4

PROJECT EXPERIENCE

Spam Detection Filter — June 2017 – July 2017

Utilized Spark and natural language processing on text messages to filter spams.

- Processed raw text messages data including lowercasing, removal of stop words and lemmatization.
- Achieved classification accuracy of 91.9% by using tf-idf and Naïve Bayes.

Environment: Spark, PySpark, Python, NLTK

Star Social: Website Development — June 2017 – July 2017

A blog website where users can create, join and leave groups, as well as make posts.

- Designed front-end interactive pages with Bootstrap and JavaScript to display groups and posts.
- Utilized Django as the back-end and implemented Models-Views-Templates structure for the website.

Environment: HTML, CSS, JavaScript, Django, Python, Bootstrap

Image Classification of Dogs and Cats using Gaussian Process — April 2017 – May 2017

Washington University in St. Louis

Performed classification on labeled images containing dogs or cats with Gaussian Process.

- Wrote scripts to formalize the image data from multiple sources via. CNN.
- Implemented singular value decomposition and statistical methods to extract useful features.
- Accomplished boosting linear regression's accuracy from 0.541 to 0.869 with Bayesian linear regression.

Environment: Python, MATLAB

Rate Y: iOS Application Development — October 2016 – December 2016

Washington University in St. Louis — Team Project

An iOS application that allows users to rate each other based on their geographic locations.

- Led the project and contributed more than 95% of code.
- Accomplished syncing and storing data between clients, real-time database, and storage provided by Firebase.
- Developed custom location service based on Mapkit and CoreLocation so users could interact with others.
- Implemented custom views to show users' friends and ratings, and designed simulated local notification.

Environment: Xcode, Firebase Service, Swift

Clustering and Classification for Gene Functions — September 2016 – December 2016

Washington University in St. Louis

Applied methods from machine learning and data mining to cluster genes with same function and make predictions.

- Used 7-NN to impute missing data; applied PCA, SVM and information gain to select features.
- Built models with random forest, neutral network, K-means, hierarchical clustering and some other methods.
- Achieved result: 86% accuracy for classification, 62% accuracy for clustering.

Environment: Weka, MATLAB, Python

Recommendation System Based on Netflix Rating Dataset April 2016 – May 2016
Washington University in St. Louis Team Project
Developed a system to recommend movies to users based on data of user-movie ratings and collaborative filtering.

- Implemented MapReduce process via python and Hadoop streaming to generate normalized movie-movie model and user-user model from Netflix Rating Dataset stored on HDFS.
- Aided in implementing Pearson Correlation as the similarity measure for collaborative filtering.
- Boosted processing speed by repeating the project using Spark and PySpark.

Environment: MapReduce, Hadoop, Pig, Python, Spark, PySpark

Scarlet Devil: 3D Video Game Development February 2016 – April 2016
Washington University in St. Louis Team Project
A three-dimensional version of Raiden where players can control the spaceship to dodge intense bullets and attack enemies.

- Developed the 2D clone game with all desired features including game menu, player control, and animation.
- Designed models for the spaceship and part of game items in Blender; created scenes for three levels in Unity.
- Contributed creative ideas and accomplished extra game elements and mechanisms like power-ups.
- Participated in the public playtest in St. Louis Science Center and collected valuable feedback from people of different ages and jobs.

Environment: Unity, Blender, C#

Design of Image Segmentation Algorithm based on CUDA January,2014 – June 2016
Central South University
Deployed CUDA on GPU to speed up massive images' segmentation using Otsu's method

- Developed parallel image processing algorithms based on classic Otsu's method
- Implemented algorithms for classic and parallel Otsu' methods via C++ and CUDA C.
- Tested the image segmentation program on GPU; verified the efficiency comparing with classic Otsu's method

Environment: Visual Studio, C++, CUDA C**,** OpenCV

SKILLS AND CERTIFICATE

- **Languages:**
  - 4+ years of strong **Python** programming experience.
  - Experience with **Swift/C++/C#/Java/HTML/CSS/JavaScript/jQuery/R/PySpark** for projects.
- **Frameworks and Tools:** Django, Hadoop, Spark, Git, Unity, MATLAB, Xcode, Visual Studio, Jupyter Notebook, Sublime Text, Postgres, Pig, Weka, RStudio.
- **Certificate:** Certificate in Data Mining and Machine Learning.