JIAYUN ZHANG

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EDUCATION

Fudan University Shanghai, China
B.S. in Computer Science Graduation: Jul 2020 (Expected)

- Overall GPA: 3.52/4.00 GPA for the last two years: 3.67/4.00 (Rank 17/155)
- Core Courses: Programming (A)/ Design and Analysis of Algorithms (A)/ Probability Theory and Mathematical Statistics (A)/ Database (A-)/ Pattern Recognition (A-)/ Digital Image Processing (A-)/ Virtual Reality (A)/ Game development (A) etc.

Aalto University Espoo, Finland
Summer Intern supervised by Prof. Yu Xiao Jun 2019 - Present

- Research Assistant at Mobile Cloud Computing (mc^2) group

PUBLICATION

Qingyuan Gong, **Jiayun Zhang**, Yang Chen, Qi Li, Yu Xiao, Xin Wang, Pan Hui. *Detecting Malicious Accounts in Online Developer Communities Using Deep Learning.* Accepted by ACM International Conference on Information and Knowledge Management (**CIKM**), 2019. [paper]

Qingyuan Gong, **Jiayun Zhang**, Xin Wang, Yang Chen. *Identifying Structural Hole Spanners in Online Social Networks Using Machine Learning.* Accepted by Annual Conference of the ACM Special Interest Group on Data Communication (**SIGCOMM Poster**), 2019. [paper]

Yihan Ma, Hua Sun, Yang Chen, **Jiayun Zhang**, Yang Xu, Xin Wang, Pan Hui. *DeepLoc: A Location Preference Prediction System for Online Lodging Platforms.* Accepted by Chinese Conference on Computer Supported Cooperative Work and Social Computing (**ChineseCSCW**), 2019. [paper]

RESEARCH EXPERIENCE

Identifying Structural Hole Spanners in Online Social Networks Mar 2019 – Present
Research Assistant supervised by Prof. Yang Chen, Fudan University

- Proposed a machine learning-based model for identifying structural hole spanners; leveraged the ego networks and the cross-site linking function to enhance the identification.
- Implemented the classifier by CatBoost. Achieved a test F1-Score of 0.857 and an AUC value of 0.856 on the Foursquare dataset.
- Contributed to a paper accepted by **SIGCOMM Poster 2019**.

User Behavior Analysis in Online Developer Communities May 2018 – Present
Research Assistant supervised by Prof. Yang Chen, Fudan University

◦ **A Representative User-centric Dataset of GitHub Developers** [code] May 2018 – Sep 2018

- Crawled user data and dependencies on GitHub in an unbiased manner.
- Built a representative user-centric dataset including the information of over 10 million GitHub Developers.

◦ **Malicious User Identification on Version Control Systems** Jun 2018 – Jun 2019

- Did a comparative study between the behaviors of legitimate users and malicious users on GitHub.
- Proposed GitSec, a deep learning-based system with Phased LSTM and attention mechanism to detect malicious accounts on VCS. Achieved a test F1-Score of 0.920 and an AUC value of 0.938 on the GitHub dataset.
- Contributed to a paper accepted by **CIKM 2019**.

◦ **Discovering Representative Work Rhythms of Developers** Jan 2019 – Present

- Proposed Gitick, a framework for identifying temporal patterns of developers' code submissions based on auto-encoder models and semi-supervised clustering algorithms.
- Evaluated Gitick on the GitHub dataset. Gitick outperforms baseline methods in terms of NMI, ARI and F-Measure. Discovered five distinct work rhythms of developers on GitHub.

Data Mining on Health-Seeking Behavior May 2017 – Apr 2018
Research Assistant supervised by Prof. Yun Xiong, Fudan University

- Devised a model with SVM for pneumonia detection based on medication records. A test accuracy of 0.915 was obtained on a real-world dataset collected from hospitals in Shanghai.
- Devised a prediction model with Time-Aware LSTM to predict one's stage of diabetes based on previous diagnoses. Achieved a test F1-Score of 0.787 on the real-world dataset.

- Developed a web-based interactive system for diabetes prediction; the system could receive historical diagnoses from users, predict the stages of diabetes using the trained model and output the results on the webpage.

WORK EXPERIENCE

VMware, Inc. Shanghai, China
MTS (Member of Technical Staff) Intern Apr 2018 – Oct 2018

- Developed a log analysis system for automatically detecting the causes of program failures. 67 types of error causes was detected with an accuracy of 0.936 on real-time data from an internal bug reporting platform.
- Developed web APIs for an internal cloud resource platform to support the upload, modification and search of virtual machine templates.
- Participated in the implementation of Template Validation Service, a system for security verification of virtual machine templates uploaded to database.

SELECTED PROJECTS

Raindrop Removal From a Single Image, advised by Prof. Junping Zhang [code] Summer 2019

- Devised a deep-learning-based model for raindrop removal. The model could identify the location and intensity of raindrops with ResNet and eliminate the raindrops with Dilated CNN and ConvLSTM.
- Incorporated Gaussian filtering in the model to remove the background interference; improved the network capability by focusing on high frequency detail of the images.
- Achieved raindrop removal results on real-world images with PSNR as 27.70 and SSIM as 0.8801.

3D Parkour Game [code] Winter 2017

- Developed a full-featured parkour game; built 3D game scenes in Unity, designed animation effects and user interactions; implemented the game logic with Unity Game scripts written in C#.

Restaurant Reservation System Winter 2017

- Designed the communication protocol with Socket programming; developed the backend of the reservation system which can help customers to check the bookings of the restaurants and make reservations.

Travel Management Website Autumn 2017

- Developed a website for recording trips using Django and ECharts. Users can mark the cities they have visited and the cities they want to visit with different colors on the map that embedded in the webpage.

Online Fitness Course Registration System Summer 2017

- Created a website for fitness course registration. The system guides the members of fitness clubs to sign up for courses, and allows club administrators to arrange courses and manage the home pages.

SELECTED AWARDS

2019 Chun-Tsung Program (Research Endowment funded by Nobel Laureate Dr. Tsung-Dao Lee)
2019 Scholarship for Outstanding Students in Fudan University (Top 10%)
2018 Xiyuan Scholar (Undergraduate Research Program in Fudan University)

SKILLS

Programming: Python, C/C++, Ruby, C#, HTML/CSS, JavaScript, SQL, Matlab, Verilog
Framework and Packages: Pytorch, Tensorflow, Scikit-learn, Numpy, Pandas, Matplotlib, Opencv etc.
Others: Django, Bootstrap, echarts.js, MySQL, MongoDB, PostgreSQL, Docker, Git, Unity, Blender etc.
Standard Language Tests: TOEFL 101 (Reading 25, Listening 27, Speaking 24, Writing 25)