Tian (Sophie) XIE

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Education

School of Computer Science, Wuhan University (WHU), Wuhan, China   **Sep 2015- Jul 2019**
- Bachelor of Science in Software Engineering; **Major GPA:** 3.87 /4.0 (Ranked 1st out of 41 students)
- Relevant Coursework: Mathematical Logic (97), Pattern Recognition (95), Human-Computer Interaction Experiments (95), Computer Organization and Architecture (94), UML & Software Modeling Experiment(94), Networks and Distributed Computing (93), Course Design of Database System(92), Discrete Mathematics (91)
- **Programming skills**: Python, Java, C++, Matlab, Visual Basic, various algorithms and data structures
- **Designing Skill**: Photoshop, After Effects, Premiere, UI Design, Game Design
- **Awards:** WHU Scholarship (Top 5%; awarded three times), WHU Outstanding Social Activist Scholarship (Top 1%; awarded three times), WHU Merit Student Scholarship (Top 5%; awarded twice)

Teaching Assistant: Linear Algebra   Sep 2016- Jan 2017
        Information Security   Sep 2017- Jan 2018

Summer Session, University of Cambridge, Cambridge, U.K.   **Jul 2016- Aug 2016**
- Awards: The Scholarship for Excellent Performance (awarded to 3/200)   2016

University of California, Berkeley (UCB)   **May 2018- Aug 2018**
- Worked in the Computational Approaches to Human Learning (CAHL) research lab's Deep Knowledge Tracing Program supervised by Assistant Professor Zachary Pardos

University at Buffalo, the State University of New York (SUNY)   **Sep 2018- Jan 2019**
- Worked in the Diagnosis of Parkinson's Disease Program supervised by Associate Professor Wenyao Xu

Research Experience

Research Assistant | Diagnosis of Parkinson's Disease using Machine Learning | SUNY **Sep 2018- Jan 2019**
Automatic Recognition of Parkinson's Disease Utilizing the Padding Activity of Fingers on a Screen
Advisor: Wenyao Xu, Associate Professor, Department of CS & Engineering, University at Buffalo, SUNY
- Performed ETL to 78,887 counts of user data (8003 participants) and extracted up to 20+ tapping features, such as finger click delay, click position dispersion, click intensity distribution
- Adopted Coefficient of Variation, which shows relative variability as a measure of click location dispersibility
- Used LSTM to analyze temporal patterns with the accuracy of Parkinson's disease judgment results up to 80%
- **Tian Xie**, Wenyao Xu, A Deep Learning Model Monitoring Padding Activity to Diagnose Parkinson's Disease, IEEE BHI & BSN 2019, submitted

Research Assistant | Chat Robot in Education of Technology | WHU **Jan 2018- Aug 2018**
A Teaching Automatic Question-Answering System applied in the course Pattern Recognition at WHU
Advisor: Weiping Zhu, Assistant Professor, School of Computer Science, WHU
- Designed and implemented the system with five parts: Problem classification, language processing, grading candidate answer, database modeling, and user interface design
- Conducted an A/B testing experiment at WHU with one class as control group and another class as treatment group that integrated the Q&A system
- Observed promising improvements: the total average score of the class using the Q&A system is higher than the class not using the system, with objective problem score 6% higher and subjective score 15% higher
- **Tian Xie**, Weiping Zhu, Xiaolei Peng, An Intelligent Teaching Assistant for College Course's Q&A, The Asia Pacific Web (APWeb) and Web-Age Information Management (WAIM) Joint Conference, submitted

Research Assistant | Prediction Model of Energy Profile | COMAP **Feb 2018**
- Implemented a time series model to fit the four states' total energy and renewable energy consumption trends
- Fitted the first-order difference via an ARMA process (the trend of residuals by ARIMA(p, 1, q) process)
- Conducted CUSUM Testing and added crawled data from 2010 to 2015 to increase the model's accuracy by 80%

Project Leader | Accurate Advertisement Recommendation System | WHU   **Mar 2017- Aug 2018**
Utilizing Machine Learning and Data Mining to Adjust Recommendation Algorithm in Advertisement Delivery
Advisor: Bing Li, Professor, School of Computer Science, WHU
- Implemented a BP neural network (strong mapping and learning ability) model to analyze the relationship between advertisers, advertising positions, and products themselves in order to provide optimal recommendations
- Utilized LBS (Location Based Services) to quantize the consumption levels of residents in each community
- Constructed a delivery strategy method utilizing recent advertisers' transaction records for 60+ communities

Data Analyzer | Evaluation and Forecasting System for NL | Citibank   **Mar 2017- Dec 2017**
Setting up a Ranking List of Investment Value of Each Network Literature(NL) with Influence Factors
- Crawled 400k+ fictions from various websites including search indices, discussion heats, and clicks using python
- Constructed an effective evaluation model to determine impact factors by K-means and PCA (reducing the dimensions of samples to decrease computation time by at least 30%);
- Analyzed novels by use of LDA, jieba, and Collections packages in python and the FudanNLP package in java
- Predicted the number of clicks for each novel by utilizing ARIMA and LSTM
- Ranked 3/120 for the prediction accuracy and the solution innovation

Research Assistant | Search Engine for Computer Education | WHU   **Aug 2017- Dec 2017**
Offering Authoritative Tutorials' Link after Filtering Commercial and Useless Websites
Advisor: Weiping Zhu, Assistant Professor, School of Computer Science, WHU
- Constructed a network database via MySQL using only the courses' name and its URL
- Surveyed the entire population of students in the Computer Science department of WHU, and conducted data analysis on the results via the pandas package in Python to identify the top 50 learning websites
- Constructed a Web Project and JSP server operating environment, using SQL to create the search function

Project Manager | Gravity—Mobile Action Game Project | Timi Studio Group, Tencent   **Aug 2017- Dec 2017**
Changing the Direction of Force in the Target Area by Shotting Gravity Bullet
Advisor: Tab Zhang, Lead Game Designer, Tencent
- Optimized game engine using Raycast class in Unity3D, designating the same force to each labeled rigid body in the same scale
- Recorded the scene and location information of each player using a PlayerInfo entity class in Unity3D
- Employed EasyTouch and NGUI Unity plug-ins to make the game more user-friendly
- Ranked 1st amongst 60 teams, and received an offer invitation from Tencent

Leadership & Activities

Chairman | Hubei Xie Taitai Culture and Film Technology Co., Ltd.   **Sep 2015- Present**
- Undertook several projects in the fields of art, film, short videos, and special effects processing
- Generated from projects the revenue that supported the independent operation of the company with 5 employees for 3 years.
- Contracted three major programs as project manager

Minister | Sunners Union of the Human Resources Department, WHU   **Apr 2016- Present**
- Designed and organized bimonthly professional seminars for WHU students
- Accompany migrant children in the community on weekly outings (participating in various activities such as making kites, baking cookies, doing tie-dye) with other volunteers recruited on campus
- Established and managed the entire studio (500+), assigned tasks to all departments, and tracked attendance
- Oversee training and meetings for new members, plan yearly anniversary activities
- Developed a teaching program for underprivileged children and migrant children
- Dedicated much time to teambuilding, earning the group the university distinction: Outstanding Group

Volunteer Teacher | Fangguo Primary School, Guo Maoling Village, Huanggang   **Jul 2017- Aug 2017**
- Designed English courses (reading/video/speaking) and art courses (handmaking/art theory)
- Prepared and revised flexible lesson plans, lectures, and disciplinary structures