DI WANG

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EDUCATION BACKGROUND

Shanghai Jiao Tong University (SJTU), School of Electronic Information and Electrical Engineering **China**

B.S.E. in Information **Sep 2014-Jun 2018**

Overall GPA: 88/100 **Major GPA**: 92.2/100 (19/166)

Core Courses: Data Structure, Operating System, Algorithm Design and Analysis, Computer Architecture, Computer Network Technology, Discrete Mathematics, Thinking and Approach of Programming, Probability and Statistics

Scholarship & Awards: Outstanding Graduate in Shanghai (5/100) for Jun 2018

CLP Instrument Academic Excellence Scholarship (3/170) Nov 2017

SJTU Academic Excellence Scholarship (20/170) 2015, 2016, 2017

RESEARCH EXPERIENCE

Natural Language Recommender Building Blocks via Mechanical Turk **University of Minnesota, USA** **Aug 2018-present**

(Advisor: Prof. Joseph Konstan)

- Implemented a website to collect users' voice when they ask for movie recommendations, traversed the speech to text using Web Speech API, saved the data into PostgreSQL database and deployed the website on Heroku
- Improved the performance in interface learnability, user response variety, and query integrity by showing user keywords as movie information instead of original recommendation queries or movie posters
- Increased the valid answer ratio from 30% to over 90% by revising the tutorial and instructions based on the results of pilot tests on Amazon Mechanical Turk with 40 workers.
- Analyzed user response pattern using Grounded Theory in keyword placement, user preference expression, and information entropy

Study of High-speed Railway Transferring Strategy **SJTU, China** **Jul 2017-Jun 2018**

(Advisor: Prof. Tong Ye)

- Modified Dijkstra Algorithm by assigning edge value dynamically to cater for HSR system efficiency.
- Lowered RMSE of predicted passenger traffic to 16.84 by combining Deep Residual Neural Network and ARMA (autoregressive moving average) Model with Keras
- Decreased the passenger delay from +3.8% to -7.5% by utilizing the modified Dijkstra algorithm and ARMA-Neural Network prediction model

CURRENT AND FUTURE WORK

Geno: enhancing web accessibility with auto-generated voice input **UCLA, USA** **Nov 2018-present**

(Advisor: Prof. Anthony Chen)

- Identified the limitations of state-of-the-art voice interface by doing user interviews and competitive comparison, and analyzing the result using Grounded Theory
- Designed the architecture and user interfaces of IDE (Integrated Development Environment) combining NLU model and visual programming from scratch
- Conducting user studies to test the designs and implementing the IDE framework

COURSE PROJECT

Dance Machine with Heart Rate Detection **SJTU, China** **Mar 2017-Jun 2017**

- Detected heart rate and transmit to computer by attaching heartrate sensor and the bluetooth chip on user's finger
- Detected footsteps by modifying a dance blanket and hand gesture by leap motion; and transferred signals to computer by modifying a keyboard and fixing electrical wires with magnets on two sides
- Designed and implemented dance machine interface, dealt with signals and calculated user scores using Unity

Gomoku Dream Strategy Game via Diligent Nexys3 Board **SJTU, China** **Sep 2017-Dec 2017**

(Advisor: Prof. Yuhong Yang)

- Implemented the artificial intelligence for Gomoku using a Minimax Alpha-Beta pruning algorithm, built a human-computer game, and designed Gomuku's interface based on C language
- Migrated the game to an FPGA board (Nexys3) and implemented VGA display control based on VHDL language, using software XPS (Xilinx Platform Studio) and SDK (Xilinx Software Development Kit)

Design of a Digital Communication Experimental System **SJTU, China** **Sep 2016-Dec 2016**

(Advisor: Prof. Yan Yuan)

- Generated two kinds of M-sequence signals using C language and implemented the feedback control system PLL (phase locked loop) to realize self-synchronization using VHDL language
- Migrated the PLL and M-sequence programs to FPGA boards (MSP 430 and Basys 3) using software CCS (Code Composer Studio)
- Implemented a code error detector and the generated bit error rate was decreased to 2.07% by implementing a matched-filter

Experiments for Digital Image Processing **Shanghai, China** **Mar 2017-Jun 2017**

(Advisor: Prof. Li Song)

- Implemented image denoising using Bilateral Filter with Strength Pareto Evolutionary Algorithm.
- Implemented edge detection and enhancement with Canny algorithm, NMS (Non-Maximum Suppression) algorithm and dual threshold method based on MATLAB language
- Implemented JPEG encoding using Huffman algorithm with MATLAB and C++ language

EXTRACURRICULAR EXPERIENCE

SEIEE Debate Team| Captain **SJTU, China** **Sep 2014-Sep 2016**

- Led the team to participate in SJTU Freshman Cup (09/2015) and Confederations Cup Debate Competition (04/2016)
- Organized recruiting process and the daily trainings and designed the team logo

Class F1403002 | Monitor **SJTU, China** **Sep 2014-Jun 2018**

- Led classmates to take part in SEIEE Family Cup Group Photo Contest (2014) and won the third prize

SKILLS AND OTHERS

Programing Languages: C++, JAVA, Python, JavaScript, HTML, CSS, MATLAB, VHDL, Verilog

Software: Heroku, PostgreSQL, Code Blocks, XPS, ISE, Origin, LABVIEW, CCS

Languages: English (Fluent): TOEFL iBT100 (10/2017), GRE 320 (3/2018)