

Lei Zhang

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EDUCATION

Shanghai Jiao Tong University (SJTU)

Sept.2014 - present

Bachelor of Software Engineering (expected in Jul.2018)

GPA (overall): **3.4/4.0**; GPA (junior): **3.8/4.0**

Core courses: Human Computer Interaction(A+), Game Design and Implementation(A), Computer Vision(A), Computer Graphics, Introduction to Computer Systems(A+), Curriculum Design of Programming(A+), Operating System, Computer System Engineering, Software Engineering, Algorithm, Principle and Technology of Database

PUBLICATION

Ziang Xiao, Helen Wauck, Zeya Peng, Hanfei Ren, **Lei Zhang**, Shiliang Zuo, Yuqi Yao, Wai-Tat Fu. *Cubicle: An Adaptive Educational Gaming Platform for Training Spatial Visualization Skills*. In Submission of the 23rd International Conference on Intelligent User Interfaces Companion (IUI2018, in submission)

RESEARCH EXPERIENCES

Assembly Assistance in Augmented Reality | Research Assistant at Digital ART Lab

Shanghai, China

Supported by SAIC-GM, a well-known car company in China

Sept.2017 - present

Supervisor: **Prof. Xubo Yang** (Professor in School of Software, SJTU)

- Segmented the camera data from HoloLens and converted them into 3D camera point clouds
- Used the ICP algorithm to track and estimate the pose of 3D models in Unity
- Designed and implemented the interaction between users and the system based on gestures and voices using HoloLens

Cubicle: An Educational Gaming Platform | Research Assistant internship at Cascade Lab of UIUC

Urbana, U.S.A

Supervisor: **Prof. Wai-Tat Fu** (Associate Professor in Department of Computer Science, UIUC)

Jul.2017 - Sept.2017

- Developed a sketching interface and integrated it into the online platform for training spatial visualization skills based on Unity WebGL and Django, enhancing the usability of the existing online platform
- Gamified paper-based spatial visualization skills training exercises into a scalable gaming platform
- Co-designed the gaming mechanism to maintain both attractiveness and effectiveness of the game series
- Implemented one of the modules in the game and recorded players' in-game behavior for further instructions and analysis

Virtual Broadcast Studio | Research Assistant at Digital ART Lab

Shanghai, China

Cooperated with Star TV in Shanghai

Sept.2016 - Jun.2017

Supervisor: **Prof. Shuangjiu Xiao** (Associate Professor in School of Software, SJTU)

- Captured and filtered the camera data from the HD camera in Unity using the video capture card's SDK
- Implemented the calibration between the HD camera and a Microsoft Kinect using methods of checkerboard calibration
- Designed and implemented the interaction between users and the virtual models based on gestures and voices using Kinect
- A paper named "*Augmented Reality TV System Based on Multimodel Mixed Interactive Editing*"(written in Chinese) was accepted by ChinaVR 2017

Family Sharing APP | Research group leader

Shanghai, China

Supported by the National University Student Innovation Program

Jun.2016 - Sept.2016

Supervisor: **Prof. Hongming Cai** (Professor in School of Software, SJTU)

- Developed an Android APP for family members to share their schedules and personal goals as well as supervising and interacting with each other, with the goal of strengthening family bonds
- Designed the ways of interaction among family members in the APP including likes, dislikes, various punishments, etc.
- Implemented all features of the client using skills of android programming, network programming and database programming in Java

PROFESSIONAL EXPERIENCES

VR Maze | Develop group leader

Apr.2017 - Jun.2017

A VR game for training people's abilities of navigation

- Brought out the idea of training people's navigation abilities in a VR game and co-designed the levels of the game
- Implemented the A-star Algorithm for path-searching in a randomized maze
- Designed and implemented the interactive operations based on HTC VIVE

- Ranked 1st out of 43 students in the Human-Computer Interaction course

Musical Shooting Game in VR | Individual developer

Mar.2017 - May 2017

A VR game combining various gaming elements such as music, shooting, props and virtual-reality

- Brought out the gaming mechanism of shooting objects in VR based on the rhythm of music
- Implemented the animation of characters based on Finite-State Machine and the Non-photorealistic Rendering of the character using Unity Shader
- Included particle systems, collision and different scenes in the game
- Used various props to enhance the uncertainty in the game

Automatic Water Level Detection System | Develop group member

Sept.2016 - Dec.2016

Supervisor: **Dr. Kai Xiao**

- Developed a tool for automatically detecting the water level of rivers using the images from monitors
- Implemented the pre-processes of images and retrieved the characteristics of the water gauge using SURF
- Trained the prediction model and predicted the water level using Support Vector Machine(SVM) methods

ATT Attendance Checking | Software Engineering Intern

Aug.2016 - Sept.2016

Company: BOTOP Intelligence Technology Company, Zhongshan, Guangdong Province, China

- Designed and developed the database of the APP based on mysql
- Implemented the wrapping of Baidu Map API for checking attendance based on employees' location

AWARDS & SCHOLARSHIPS

National Endeavor Scholarship, Ministry of Education of People's Republic of China

Sept. 2016

Rongchang Science and Technology Innovation Scholarship (top 30 in SJTU)

Oct. 2017

B-Class Scholarship (top 5%)

Nov. 2017

EXTRACURRICULAR ACTIVITIES

- The 5th place in "Top-ten singers of campus" Musical Contest of Shanghai Jiao Tong University Dec. 2015
- Host of the Master Distinguished Lecture in Shanghai Jiao Tong University Oct. 2014 - Sept. 2015

SKILLS AND OTHERS

Programming: C/C++, C#, Java, Python, PHP, HTML, Javascript, SQL, R;

Mixed-Reality: Kinect, HoloLens, HTC VIVE, Unity, Unreal, etc.

Web: WebGL, Django, jQuery, CSS, Spring, Hibernate, JDBC, Servlet, Tomcat, etc.

Languages: Mandarin: Native; Cantonese: Native; English: Fluent, Toefl (104, Speaking(26));

Interests: Singing, Producing music, Basketball, Swimming, Photography.