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 (third-year): **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, **Lei Zhang**, Zeya Peng, Hanfei Ren, Shiliang Zuo, 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 with high granularity

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 the family bond
- Designed the ways of interaction among family members in the APP including likes, dislikes, various punishments, etc.
- Implemented functions of the client end including network programming, database programming and internal logic 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 2016
Rong-Chang Science and Technology Innovation Scholarship (top 1%) 2017
B-Class Scholarship (top 10%) 2017

EXTRACURRICULAR ACTIVITIES

- The 5th place in "Top-ten singers of campus" Musical Contest of Shanghai Jiao Tong University 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;
Languages: Mandarin: Native; Cantonese: Native; English: Fluent, Toefl (104, Speaking(26));
Interests: Singing, Producing music, Basketball, Swimming, Photography.