ZHUOHAO ZHANG

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EDUCATION

University of Illinois at Urbana-Champaign   Urbana, IL
Master of Science in Computer Science   Aug. 2019 – May. 2021 (Expected)

Zhejiang University   Hangzhou, China
Bachelor of Engineering in Computer Science (**with Honors**) GPA: 3.88/4, Rank: Top 5% of 181   Sept. 2015 – Jun. 2019

RESEARCH EXPERIENCE

University of Illinois at Urbana-Champaign (Data Driven Design Group)   Urbana, IL
Research Intern, Mentor: Prof. Ranjitha Kumar   2019 – 2020 (Expected)
Understanding the Efficiency of Emoji Sequences Using Information Theory

- Currently heading a group developing and maintaining an iOS application "Opico" released in App Store, a social media mobile app of more than 1000 users allowing users to create and share reactions through Emoji
- Conducted information theory to extract information encoded in emoji sequences and empirically measure properties from emoji information channel

Cornell University (Enhancing Ability Lab, Cornell Tech)   New York City, USA
Research Intern, Mentor: Prof. Shiri Azenkot   2017 – 2018
Design Interactions for 3D Printed Models for Blind People

- Published **two papers at top conferences** (ACM CHI 2019 & ACM ASSETS 2018)
- Designed an iOS application "Talkit++" to augment fabricated 3D models for blind people; **Deployed in real use at several special education schools**; Project released at: https://www.interactiveprintedmodels.com
- Applied OpenCV based algorithms to detect 3D models and hand gestures; Customized native iOS to enable speech recognition and text-to-speech
- Based on 3D model's position and user's input, Talkit++ utilized speaking textual information, playing audio recordings, and displaying visual animations for blind people

PROJECT HIGHLIGHTS

GPK: An Efficient Input Method Using Keyboard (ACM CHI 2019 First Author)

- Headed the design of a **universal plugin** to support typing special symbols on keyboards through natural gliding
- Applied unique principles and algorithms similar to word2vec and K-means to process user's input and constructed statistical models and pattern recognition algorithms to recognize symbols; Reached a recognition accuracy of 96%

Virtual-Reality Based Visual Data Analytics (Bachelor's Thesis)

- Devised a VR application in HTC Vive using 3D urban data of housing in Manhattan; Integrated visual data analytics and scalable interactions; Registered as provincial innovation project and managed a research team of four
- Adapted space partition, cluster analysis and data visualization techniques to preprocess 3D data points, and enabled collaborative immersive wandering experiences in a city-level

Computer System Integration (Multiple Coursework)

- Assembled CPU and hardware system including Single-Cycle, Multi-Cycle, Pipeline CPU, and System-on-Chips
- Programmed applications of 2D games and mini-shell based on an integrated hardware system

Mini-series Projects (Coursework)

- **MiniSQL**: A simple local relational database implementation; Supported crud functions and dynamic multilevel indexing based on B+ tree
- **MiniAlpha-Go**: A board game AI using Monte-Carlo-Tree-Search combined with a Convolutional Neural Network

HONORS

- ACM CHI Student Research Competition, Second Prize   2019
- First-class Scholarship (top 3% in ~850 students)   2016&2017&2018
- The Outstanding Student Title (top 3% in ~850 students)   2016

SKILLS

- iOS Development, AR/VR frameworks, Unity
- C#, C/C++, Java, Python, JavaScript, HTML, CSS, D3.js, SQL, VHDL
- Machine Learning, Information Retrieval, Human-centered AI, Optimization Algorithms