Zhuoni Jie

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RESEARCH INTERESTS

Human-Computer Interaction, Computer-Supported Cooperative Work, Social Computing, Affective Computing

EDUCATION

UNIVERSITY OF MARYLAND, COLLEGE PARK   2019 - Present
Ph.D. student, College of Information Studies (iSchool) | Advisor: Ge Gao

UNIVERSITY OF CAMBRIDGE   2018 - 2019
M.Phil. in Advanced Computer Science | Advisors: Hatice Gunes & Alan Blackwell
Thesis: Taste-related Expression and Personality Analysis in Human-Human and Human-Robot Interactions

TSINGHUA UNIVERSITY   2014 - 2018
B.E. in Industrial Engineering & Minor in Finance
Thesis: Consumer Demand Estimation Based on Discrete Choice Models and Machine Learning

TECHNICAL UNIVERSITY OF DENMARK   2016 - 2016
Exchange student in Department of Computer Science and Applied Mathematics

EMPLOYMENT

MICROSOFT RESEARCH ASIA   2017 - 2017
User experience researcher, Innovation Engineering Group | Mentor: Yan Xia

MALONG TECHNOLOGIES   2017 - 2017
AI product designer

PUBLICATION

JIE, Z. , Mahmoud, M., Stafford-Fraser, Q., Robinson, P., Dias, E., Skrypchuk, L. (2018, May). Analysis of yawning behaviour in spontaneous expressions of drowsy drivers. In 2018 13th IEEE International Conference on Automatic Face Gesture Recognition (FG 2018) (pp. 571-576). IEEE.

RESEARCH

CAMBRIDGE COMPUTER LAB | Advisor: Dr. Hatice Gunes   2018 - 2019
This project aimed to design and conduct experiments to investigate peoples' facial expressions when tasting different flavors, in Human-Human and Human-Robot interactions.

- Study peoples' behaviors, taste-likings, and interaction experiences with human/robot instructors using different instruction styles.
- Extract visual features and facial dynamics to develop a technique to automatically predict peoples' taste-liking, putting cultural backgrounds and personalities into consideration.

CAMBRIDGE COMPUTER LAB | Advisors: Prof. Peter Robinson, Dr. Marwa Mahmoud   2017 - 2017
This project aimed to investigate applications of computer vision in the automotive domain, with already 8 publications (project link here). I investigated driver drowsiness with a focus on yawning, and proposed a novel detection model.

- Developed a vision-based approach fusing regional facial geometric and appearance features to effectively detect both mouth-covered and uncovered yawns in natural expressions (F1-score 92.77%).
- Found that face gesture can be used as a novel cue for drowsiness detection.

TSINGHUA HUMAN-COMPUTER INTERACTION LAB | Advisor: Prof. Chun Yu   2018 - 2018
This project aimed to facilitate non-native researchers to write academic papers (project system here). I investigated stylometric features and visualization. Currently few researches focus on improving academic writing's stylometry.

- Conducted user study to investigate Chinese English-as-Second-Language (ESL) academic writers' concerns.
- Designed a visualization system to help scholars comprehend and compare stylometric features between papers.
- Provided guidelines for ESL scholars to write readable, high-quality and native-style academic papers.

TSINGHUA HUMAN FACTORS ENGINEERING LAB | Advisor: Prof. Pei-Luen Patrick Rau   2018 - 2018

This project was a collaboration with Tencent Research Institute to investigate Chinese users' social media measurement. Specifically, I explored the factors that drive Chinese to use mobile applications.

- Refined a theoretical model based on classic behavioral models including the Affect-Behavior-Cognition model, adding social influence, perceived risk, hedonic value and personal investment factors to explain app stickiness.
- Designed an online survey and undertook data analysis using Structural Equation Modeling.
- Found the importance of personal investment and apps' hedonic value on user stickiness, and social influence's different effects on functional apps and social apps.

PROJECT

SOCIAL GRAPH AND EPISODE ANALYSIS ON TV SERIES (project link here)   2016 - 2016

Technical University of Denmark | Advisor: Prof. Sune Lehmann

- Constructed and analyzed character social graphs (communities, node degree and centrality).
- Detected the important words in episodes using TF-IDF and generated word clouds.
- Conducted sentiment analysis, visualized the correlation between core characters and sentiment score changes in each episode, and predicted episode sentiment outcomes.

BIG DATA STUDY ON LEAGUE OF LEGENDS GAME   2016 - 2016

Technical University of Denmark | Advisor: Dr. David Kofoed Wind

- Retrieved 8GB game statistics and player information. Used Spark to create a Resilient Distributed dataset and used MapReduce to fetch new datasets. Stored datasets into MongoDB, and did aggregation analysis.
- Used DBSCAN algorithm to cluster champions (game roles selected by players), getting interesting insights.

HAND GESTURE INTERACTION WITH SMART HOME LIGHTING SYSTEM   2017 - 2017

Tsinghua University | Advisor: Prof. Chun Yu

- Designed and conducted two user studies to define and evaluate user-generated interaction gestures.
- Used HTC Vive and LeapMotion to construct a VR game visualizing a gesture-based lighting control system.

HEARTLIGHT: CONCENTRATE ON THE TASK AT HAND   2017 - 2017

Tsinghua University | Advisor: Prof. Qin Gao

- Iteratively designed a mobile app to help people happily avoid distractions from mobile phones while working.
- Designed reward mechanism of the app and allowed users to interact in communities.
- Let people customize experience by changing simulated agents of three different personalities.

TALK

ANALYSIS OF YAWNING BEHAVIOR IN SPONTANEOUS EXPRESSIONS OF DROWSY DRIVERS   2018 - 2018

8th International Workshop on Human Behavior Understanding, Xi'An, China

ACADEMIC SERVICE

Student Volunteer for CHI 2019   May 2019, Glasgow, UK

HONORS & AWARDS

- Scientific Research Innovation Scholarship (top 3% in Tsinghua)   2017
- American Mathematical Modeling Contest: Meritorious Winner   2017
- National Scholarship for Outstanding Exchange Students (China Scholarship Council)   2016
- University Award for Outstanding Student Leadership (top 1% in Tsinghua)   2016
- Guanghua Scholarship (top 0.5% in Tsinghua)   2015
- Department Award for Outstanding Social Work and Volunteering   2015