Lu Wang

PHD STUDENT AT DREXEL UNIVERSITY

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Summary

I am a Human-Computer Interaction and Health Informatics researcher, applying social science knowledge and methods to inform design and development. My focus is applying Artificial Intelligence in healthcare, including users' needs investigation, unobtrusive design and development, and privacy and fairness issues.

Education

PhD of Information Science, College of Computing & Informatics

Philadelphia, PA, US

DREXEL UNIVERSITY
2020-2025

- GPA: 4.00/4.00
- Advisor: Dr. Jina Huh-Yoo
- Research Areas: Human-Computer Interaction, Health Informatics, Artificial Intelligence

Master of Applied Psychology, User Experience

Beijing, CN

BEIJING NORMAL UNIVERSITY (BNU)
2016-2018

- GPA: 87/100, GPA Rank: 1/59
- Advisor: Dr. Jian Li
- Thesis: Using Multiple Source Information to Predict User's Emotion
- Keywords: User experience, Emotion prediction, Text mining, Machine learning, Chat-log

Bachelor of Psychology

Beijing, CN

BEIJING NORMAL UNIVERSITY (BNU)
2012-2016

- GPA: 90/100
- Advisor: Dr. Jian Li
- Thesis: Recovery of Resources is for Better Learning: The Influence of College Students' Daily Learning on Their Self-control Resources
- Keywords: Self-depletion, Diary study, Hierarchical linear model, Dumbbell straight method

Work Experience

Research Assistant

Philadelphia, PA, US

DREXEL UNIVERSITY
May 2020-present

- Performed extensive literature reviews, meticulously analyzing over 200 papers across various topics such as conversational agents, AI support for caregivers of people living with dementia, and people's perceptions toward bias and related concepts in large language models.
- Conducted mixed methods (quantitative sentiment analysis and qualitative content analysis) to evaluate the GPT-2 and fine-tuned GPT-2 performances for Problem-Solving Therapy based on 306 therapy session transcripts between informal caregivers of people living with dementia and therapists. Coded and analyzed interviews of 12 informal caregivers of people living with dementia to understand when technology should or should not support the emotion work engaged in informal caregiving.
- Applied web crawl methods to investigate the representativeness of "People Also Ask" of Google Web search on the information needs concerning Alzheimer's Disease and related dementias and compare ChatGPT with users when responding to Reddit posts related to Alzheimer's Disease and related dementias.

User Researcher

Hangzhou, China

NETEASE INC. (NASDAQ: NTES)
July 2018 - Dec. 2018

- Conducted user studies for the business line of NetEase Cloud Music
- Completed seven projects from the early planning stage of the product to the iteration of the NetEase Cloud Music App. Working methods included the interview method, questionnaire method, web crawler, persona, etc.

Data Analyst Intern

Beijing, China

BIG DATA DEVELOPMENT DEPARTMENT, STATE INFORMATION CENTER
Nov. 2017 - Jan. 2018

- Assisted in paper reviewing, data analysis, data visualization, and report writing.
- Accomplished descriptive statistics analysis and text analysis of cases on National 12358 Price Supervision Platform.
- Applied R language to analyze Baidu Index, base station data, and other indicators to describe the flow of Xiong'an talents.
- Analyzed and compared the emotional index differences of people from different media sources with a data analysis platform.

User Researcher Intern *Beijing, China*

Lenovo Research *July 2017 - Oct. 2017*

- Assisted in Artificial Intelligence research.
- Used R language and Python to analyze customer service dialogue data;
- Labeled the talking techniques used by customers and agents through chat logs to find the most appropriate responses to different user states and assisted in the design of Chatbot interaction flow chart.

Teaching Assistant *Beijing, China*

Beijing Normal University *2018, 2017, 2016*

- Educational Psychology, Sept. 2016 - Feb. 2017, Assisted instructor (Dr. Jian Li) in attendance checking, instructing, and performance rating.
- Issues in Research Methodology: Quantitative, Qualitative and Action Research, Apr. 2018 - May 2018, Assisted instructor (Dr. Xianjun Zheng) in attendance checking, group forming and instructing, performance rating, and rewarding.

User Researcher Intern *Beijing, China*

Baidu.com Times Technology (Beijing) Co. Ltd. *Oct. 2015 - Mar. 2016*

- Assisted in telephone interview invitation, interview recording, questionnaire inputting, data analyzing, and report writing.
- Developed a program to generate syntax of SPSS using C language, which improved the efficiency of data analysis by 200%.

Skills

Psychology Experiment	E-Prime, Inquisit, Qualtrics
Programming	Python, MATLAB, C, Pascal
Statistics	R, SPSS Statistics, Mplus
Design	Adobe Photoshop, Adobe Illustrator, Flash
Research Methods	Quantitative Methods, Qualitative Methods, Participatory Design Methods, Statistical Visualization

Honors & Awards

2023	**CRA-WP Grad Cohort Conference Grant**	*San Francisco, CA*
2022	**Grace Hopper Celebration (GHC) Student Scholarship**	*Virtual*
2022	**NSF SCH PI Workshop Student Award**	*Virtual*
2021	**Grace Hopper Celebration (GHC) Student Scholarship**	*Virtual*
2021	**CRA-WP Grad Cohort Conference Grant**	*Virtual*
2021	**NSF SCH PI Workshop Student Award**	*Virtual*
2021	**GREPSEC Workshop Student Award**	*Virtual*
2021	**USENIX Diversity Grant**	*Virtual*
2018	**Outstanding Graduates (Top 5%)**	*Beijing*
2018	**University Houcan Scholarship**	*School of Psychology, BNU*
2017	**First Class Scholarship (Top 10%)**	*Beijing Normal University*
2017	**Huawei Scholarship**	*Huawei Technologies Co., Ltd.*
2016	**Outstanding Graduates (Top 5%)**	*Beijing*
2016	**Beisen Scholarship**	*Beijing Beisen Cloud Computing Co.,Ltd.*
2015	**National Endeavor Fellowship**	*China*
2014	**National Endeavor Fellowship**	*China*
2014	**First Class Scholarship (Top 10%)**	*Beijing Normal University*
2014	**Second Prize of Mathematical Modeling Competition**	*Beijing Normal University*
2013	**National Endeavor Fellowship**	*China*
2013	**First Class Scholarship (Top 10%)**	*Beijing Normal University*
2013	**Third Prize of ACM Computer Programming Competition**	*Beijing Normal University*

Conferences

ACM CHI Conference on Human Factors in Computing Systems *Virtually*

Poster *April 23-28, 2023*

- Wang, L., Chen, C., & Huh-Yoo, J. (2023, April). Investigating the Synonyms of Conversational Agents to Aid Cross-Disciplinary CA Research. In Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems (pp. 1-10).

Computing Research Association Widening Participation Grad Cohort for Women   *Francisco, CA*

SMALLCAPS POSTER   *April 20-22, 2023*

- Lu Wang, Jina Huh-Yoo. "Validity Examinations of Social Bias Measurements and Mitigations in Word Embeddings."

AMIA 2021 Annual Symposium   *Hilton San Diego Bayfront*

POSTER   *Oct. 30 2021 - Nov. 3 2021*

- Lu Wang, Jina Huh-Yoo. "The Representativeness of "People Also Ask" of Google Web Search on the Information Needs Concerning Alzheimer's Disease and Related Dementias."

Computing Research Association Widening Participation Grad Cohort for Women   *Virtual*

TECH TALK   *Apr. 2021*

- Lu Wang, Munif Mujib, Jake Williams, George Demiris, Jina Huh-Yoo. "An Evaluation of Generative Pre-Training Model-based Chatbot in Therapist-Patient Dialogue Context."

Annual Conference on Digital Media Studies (DMS'18)   *Beijing, China*

TALK   *Nov. 2018*

- Lu Wang, Jian Li. "Using Multiple Source Information to Predict User's Emotion."

The International Association of Societies of Design Research (IASDR'17)   *Cincinnati, US*

TALK   *Nov. 2017*

- Zhiyong Fu, Jia Lin, Lu Wang. "The Research and Design Framework for Citizen Science."

Industrial Design Research (UXPA China'17)   *Nanjing, China*

TALK   *Oct. 2017*

- Ying Fu, Han Xu, Lu Wang, Mengfan Li, Yu Dai. "ZANMA-Improve the Relationship between Mother-in-Law and Daughter-in-Law."

31st International Congress of Psychology   *Yokohama, Japan*

POSTER   *July 24–29, 2016*

- Lu Wang, Wen Wen, Jian Li, and Cheng Huang. "Cool the Warm: Stimulating Analytical Thinking to Make Rational Decisions."

Projects

Co-Designing and Understanding the Roles of Conversational Artificial Intelligent Systems on Caregiving   *Drexel University*

GRADUATE RESEARCH ASSISTANT   *Apr. 2022 — Now*

- Conduct a review mapping study to understand the caregivers' needs and finding opportunities for developing assistive tools
- Conduct a qualitative analysis of interviewing caregivers' needs in supporting people living with dementia

Assistive Tool for Conversation of Patients, Caregivers and Doctors project   *Drexel University*

GRADUATE RESEARCH ASSISTANT   *Mar. 2022 — May. 2022*

- Implementing Microsoft Azure to realize speech-to-text function
- Outcome: Python codes

Fairness in Word Embeddings   *Drexel University*

GRADUATE RESEARCH ASSISTANT   *Jan. 2022 — Now*

- Investigate the gaps in fairness definitions, evaluations, and mitigations in word embeddings

Privacy Agreement Settings of Chatbot Development Frameworks and Their Deployment Platforms   *Drexel University*

GRADUATE RESEARCH ASSISTANT   *Apr. 2021 — Now*

- Investigate how the privacy agreement is written and designed for different chatbot development frameworks and their deployment platforms for the third-party entities.

How Chatbot Concepts Evolve in Multi-disciplinary Context   *Drexel University*

GRADUATE RESEARCH ASSISTANT   *Oct. 2020 — Now*

- Use the CiteSpace software to tack how chatbot concepts evolve in a multi-disciplinary context to understand how researchers from different backgrounds or disciplines understand/define these concepts.

Internet Search Analytics of Dementia-Related Questions Project

Drexel University

GRADUATE RESEARCH ASSISTANT

Dec. 2020 — Sept. 2021

- Investigate what questions people ask about Alzheimer's disease and related dementias. Used Google's "People Also Ask" function to investigate the most frequently asked questions on the Web and their suggested answers.

Evaluation of GPT-2 based Chatbot in Therapist-Patient Dialogue Context

Drexel University

GRADUATE RESEARCH ASSISTANT

July 2020 — Dec. 2020

- Evaluated the performance of the pre-trained model and the fine-tuned model of OpenAI GPT-2 from the perspective of conversational quality in the Therapist-Patient Dialogue Context. Evaluation methods included analyses of the proportion of non-word outputs, the length of response (number of words in a response), and sentiment components.

CADENCE (a Conversational Agent [CA] based library for DEmeNtia CarE) Project

Drexel University

GRADUATE RESEARCH ASSISTANT

May 2020 — July 2020

- Participated in the review work of automatic summarization, analysis of web searching results related to dementia.

Assessment and Training of Metacognition Regulation Skills of Adolescents Project (The 12th Five Year Plan of Education Science)

Beijing

GRADUATE RESEARCH ASSISTANT

June 2015 — May 2018

- Participated in review work of metacognition and problem solving, research conduction in high school, and data analysis of scales using SPSS, Mplus, and R Language.

Learning Quality Scale Revision Project (Research and Development of the Evaluation Model of the Comprehensive Psychological Quality of Primary and Secondary School Students)

Beijing

GRADUATE RESEARCH ASSISTANT

Mar. 2016 — Dec. 2017

- Participated in review work of learning quality, research conduction in high school, and items analysis and scale revision of eight scales using SPSS, Mplus, and R Language.

China Maker Education Blue Paper 2016 Project

Tsinghua University & Intel

GRADUATE RESEARCH ASSISTANT

Jan. 2017 — Aug. 2017

- Leader of the research group, mainly charged with desk research, research design and report writing, accomplished questionnaire design and publishing, interview design and conduction as well as data analysis and presentation.

Driving Gamification for Older People

Swinburne University of Technology

GRADUATE RESEARCH ASSISTANT

Mar. 2017 — May 2017

- Conducted scoping review through the identification of 46632 records, screening of 41549 records, eligibility examination of 133 records, and paper review of 90 records.

Cortana & Internet of Things (IoT) Project

Microsoft Research Asia (MSRA)

GRADUATE RESEARCH ASSISTANT

Feb. 2017 — June 2017

- Designed a smart kitchen assistant to help working women with the daily menu and fasten the relationships among families based on IoT and artificial intelligence technology (Cortana). Participated in the desk research, questionnaire design, interview, persona making, and journey map-making as well as conceptual design and presentation delivering. (Confidentiality Agreement Signed)

Natural Voice Interaction in Chinese Context Project

Land Rover

GRADUATE RESEARCH ASSISTANT

Sept. 2016 — Dec. 2016

- Designed a tool to solve fatigue driving problems. Participated in desk research, collage making, mind map making, context research, user journey map making, affinity diagram making, logic map making, tookit research, storyboard making, low-fidelity prototyping, and iterating. (Confidentiality Agreement Signed)

Reducing Halo Effect using Cognitive Resources and Self-Regulation Resources (The Plan Project of Beijing College Students' Scientific Research and Entrepreneurial)

Beijing

ACTION UNDERGRADUATE RESEARCHER

Dec. 2013 — Sept. 2015

- Completed paper review of Halo Effect, dual-system theory, and ego-depletion and participated in research design, research conduction of ten pilot studies, and two formal studies using scales, E-prime experiments, dumbbells, and dictation task, etc., analyzed data using SPSS.

Students Summer Social Practice Program

Beijing Normal University

UNDERGRADUATE RESEARCHER

Mar. 2017 — May 2017

- Conducted questionnaire survey related to the influence of parenting style on children's procrastination behavior in Chengdu City, Sichuan Province, China (Summer, 2014) and participated in the survey on sex education of eight high schools in Henan Province, China (Summer, 2015).

Faculty Scientific Research Projects   *Beijing Normal University*

Undergraduate Researcher Assistant   *Sept. 2012 - June 2018*

- Transcribed sound records of interviewing parents in mainland and Taiwan, distributed and collected questionnaires and scales related to teachers' ethics and teaching evaluation system, acted as experimenter to study attention, decision making under risks and Electroencephalogram changes when subjects played games, acted as an interviewer to study the relationship between roommates in dormitory and investors' thinking progress in illegal fund-raising projects, conducted data entry and analysis.

Exchange Experience

Swinburne University of Technology   *Australia*

Visiting Scholar   *Mar. 2017 - May 2017*

- Projects on driving simulators for old drivers.

University of Michigan   *The United States*

Visitor   *Feb. 2014 - Feb. 2014*

- Culture exchange and research collaborations

Volunteer Experience

Review	**AMIA 2021 Annual Symposium, CHI 2021 Papers, CSCW 2023 Papers**	*Virtual*
2020	**IEEE BigData Conference**	*Virtual*
2020	**Research Data Alliance (RDA) US**	*Virtual*
2018	**Language Rehabilitation of Hearing and Impaired Children Program**	*Beijing, China*
2016	**Conference of Chinese Psychologists**	*Beijing, China*
2016	**Chinese Applied Psychology Conference**	*BNU, Beijing, China*
2015	**Slush International Conference**	*Beijing, China*
2014	**Asia-Pacific Economic Cooperation (APEC)**	*Beijing, China*
2014	**Voluntary support education in Sichuan Province**	*Jianyang, China*
2013	**China (Beijing) Garden Expo**	*Beijing, China*
2013	**China Tennis Cheerleading Service for China Open**	*Beijing, China*
2012	**United the Force for Good Program, China Foundation for Poverty Alleviation**	*Beijing, China*