Lu He

Email: lu.he@uci.edu
Website: luheholly.com

Ph.D. Candidate
Department of Informatics
University of California, Irvine

RESEARCH INTERESTS

Substantive: Health informatics, human-computer interaction, social media mining, health communication, computer-supported cooperative work (CSCW)

Methodological: Natural language processing, applied machine learning & deep learning, social network analysis, statistical analysis

EDUCATION

2017-present **University of California, Irvine**
Ph.D. in Informatics
Advisor: Kai Zheng, Ph.D.

2013-2017 **University of Minnesota, Twin Cities**
Bachelor of Science with Distinction in Computer Science

PUBLICATION

Peer-reviewed Journals

[J4] He C, **He L**, Lu T, Li B. Beyond Entertainment: Unpacking Danmaku and Comments' Role of Information Sharing and Sentiment Expression in Online Crisis Videos. Proceedings of the ACM on Human-Computer Interaction Volume 5, CSCW (October2021, forthcoming)

[J3] **He L***, He C*, Reynolds TL, Bai Q, Huang Y, Li C, Zheng K, Chen Y. Why Do People Oppose Mask Wearing? A Comprehensive Analysis of US Tweets During the COVID-19 Pandemic. J Am Med Inform Assoc. 2021. (* equal contribution) PMID: 33690794

Editor's Choice & Featured

[J2] **He L**, Yin T, Hu Z, Chen Y, Hanauer DA, Zheng K. Developing a Standardized Protocol for Computational Sentiment Analysis Research Using Health-Related Social Media Data. J Am Med Inform Assoc. 2021;28(6):1125–34. PMID: 33355353

[J1] Ma H, Smith C.E, **He L**, Narayanan S, Giaquinto R.A, Evans R, Hanson L, Yarosh S. Write for Life: Persisting in Online Health Communities

through Expressive Writing and Social Support. Proceedings of the ACM on Human-Computer Interaction Volume 1, CSCW (November 2017), 24 pages. DOI:https://doi.org/10.1145/3134708

Peer-reviewed Conference Proceedings

[C6] **He L**, He C, Wang Y, Hu Z, Zheng K, Chen Y. What Do Patients Care About? Mining Fine-grained Patient Concerns from Online Physician Reviews Through Computer-Assisted Multi-level Qualitative Analysis. AMIA Annu Symp Proc. 2020;544–53. PMID: 33936428

Student Paper Competition Finalist

[C5] **He L**, Zheng K. How do general-purpose sentiment analyzers perform when applied to health-related online social media data? Proceedings of the 2019 World Congress on Health and Biomedical Informatics (MEDINFO 2019).

Student Best Paper Nomination

[C4] Shehada ER, **He L**, Eikey EV, Jen M, Wong A, Young S, Zheng K. Characterizing frequent flyers of an emergency department using cluster analysis. In: Proceedings of the 2019 World Congress on Health and Biomedical Informatics (MEDINFO 2019).

[C3] Chi C, **He L**, Ravvaz K, Weissert J, P. Tonellato. Optimized Decision Support Rules of Precision Warfarin Treatment. 2018 Pacific Symposium on Biocomputing (PSB 2018).

[C2] Fan Y, **He L**, Zhang R. Evaluating Automatic Methods to Extract Patients' Supplement Use From Clinical Reports. IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2017).

[C1] Fan Y, **He L**, Pakhomov S, Melton G, Zhang R. Classifying Supplement Use Status in Clinical Notes. 2017 American Medical Informatics Association Joint Summits (AMIA 2017).

2nd Place in Student Paper Competition

Extended abstracts, workshops, and posters

[A1] Yin, T. & **He,L.** Challenges of applying sentiment analysis on health-related social media data. Southern California Natural Language Processing Symposium (SoCal 2019)

Best Poster Award

EXPERIENCES (SELECTED)

2021 -present **AMIA Workgroup Volunteer**

Advisor: Titus Schleyer, DMD, Ph.D.

Project: To conduct a comprehensive survey of the landscape of Fast Healthcare Interoperability Resources (FHIR) implementations.

2020 -present **Graduate Research Assistant**

Advisors: Caryn Bradley, PT, Ph.D., William Tang, Ph.D., Kai Zheng, Ph.D., Anton Palma, Ph.D.

Project: Working closely with researchers and practitioners in physical therapy, biomedical engineering, and biostatistics, I combine their medical knowledge to develop clinical algorithms to predict days to discharge for infants in Neonatal Intensive Care Unit (NICU) based on their feeding performance.

2017 -present **Graduate Research Assistant**

Department of Informatics, University of California, Irvine

Advisors: Kai Zheng, Ph.D., Yunan Chen, Ph.D.

Project 1: Conducted a systematic literature review on the use of computational tools for healthcare social media studies. Empirically evaluated the validity of tools. [C5, W1, J2]

Project 2: Characterized emergency department frequent attenders using cluster analysis. [C4]

Project 3: Developing computer-assisted qualitative analysis pipeline to extract useful information from free-text data. [C6]

Project 4: Analyzing public responses on social media to the COVID-19 pandemic. [J3]

2018.6-9 **Bioinformatics Programmer**

Bakar Computational Health Sciences Institute (BCHSI),

University of California, San Francisco

Advisor: Gundolf Schenk, Ph.D.

Project: Developed test units for a program to identify Protected Health Information (PHI) in clinical notes. Improved the performance of the program to be able to run on 60 million notes.

FELLOWSHIPS, HONORS & AWARDS

2021 Editor's Choice of Journal of American Medical Informatics Association (JAMIA) [J3]

2020 Student Paper Competition Finalist, American Medical Informatics Association Annual Symposium (AMIA 2020) [C6]

2019	Best Poster Award (1/40), Southern California Natural Language Processing Symposium (SoCal 2019) [W1]
2019	Student Best Paper Nomination, 2019 World Congress on Health and Biomedical Informatics (MedInfo '19) [C2]
2018	CRA-W Grad Cohort Workshop, Computing Research Association
2017	Graduate Dean Recruitment Fellowship, Department of Informatics, UC Irvine
2017	Dean's Award, Department of Informatics, UC Irvine
2017	2nd Place in Student Paper Competition, 2017 American Medical Informatics Association Joint Summits (AMIA 2017) [C1]
2014	Undergraduate Special Recognition, Department of German, Nordic, Slavic and Dutch, University of Minnesota
2013	Maroon Global Excellence Scholarship (four-year), University of Minnesota
2013	Dean's List (three-year), University of Minnesota

TEACHING

2018	IN4MTX 151 (Project Management)
2017	CSci 1913 (Introduction to Algorithms and Data Structures)

SKILLS

Research methods

Qualitative

Interview, observational study, user study, grounded theory, wizard-of-oz

Quantitative

Applied machine learning & deep learning, natural language processing, social network analysis, statistical analysis, linear models, generalized linear models

Programming languages

Python (proficient), R (medium), Matlab (medium), Java (medium), C/C++ (medium), SQL (medium), Lisp (familiar), Clojure (familiar), Go (familiar), Ruby (familiar)

Frameworks and packages

Python (scikit-learn, Numpy, Pandas, NLTK, Spacy, Gensim, Keras, PyTorch, Django, Tensorflow), R (ggplot, tidyverse, tidytext, dplyr, cluster, mltools, sna, igraph)

Databases

MySQL, PostgreSQL

Misc.

LaTex, Github, Jupyter Notebook, Amazon Web Services

Languages

Mandarin Chinese (Native), English (Full professional proficiency), Japanese (JLPT N3), German (Limited proficiency)

SERVICES

Reviewer

Conferences

AMIA Annual Symposium (2018-2021), AMIA Informatics Joint Summit (2019), CHI Late Breaking Work (2020), The Pacific Asia Conference on Information Systems (2021)

Journals

Journal of Medical Internet Research (2019-2020), BMC Medical Informatics and Decision Making (2020-2021), Journal of Healthcare Informatics Research (2020-2021), Journal of Biomedical Informatics (2021)

Volunteer

AMIA Symposium Student Volunteer (2017), AMIA Year-in-Review Student Working Group Volunteer (2020), Women in Academia Reading Group Organizer (2020)

TALKS & PRESENTATIONS

Invited Talks

2019.4.8 "Characterizing Frequent Attenders of Emergency Department Using Cluster Analysis"

Medical Intelligence and Innovation Institute (MI3), Children Hospital of Orange County (CHOC)

Conference Presentations

2020.11.16 "What Do Patients Care About? Mining Fine-grained Patient Concerns from Online Physician Reviews Through Computer-Assisted Multi-level Qualitative Analysis"

AMIA Annual Symposium 2020, Virtual Event (Recorded, Co-present with Chanyang He)

2020.11.15 "What Do Patients Care About? Mining Fine-grained Patient Concerns from Online Physician Reviews Through Computer-Assisted Multi-level Qualitative Analysis"

AMIA Annual Symposium 2020, Student Paper Competition (Virtual Live Presentation)

2019.8.25 "Characterizing Frequent Attenders of Emergency Department Using Cluster Analysis"

MedInfo 2019, Lyon, France

2019.8.23 "How Do General-purpose Sentiment Analyzers Perform on Health-related Social Media Data?"

MedInfo 2019, Lyon, France

MENTORING

Tasmima Khan (Undergraduate, UCI, 2021.4-present)

Tingjue Yin (Undergraduate, UCI, 2019.3-2020.6) [W1, J2]

Peilin Gan (Undergraduate, UCI, 2020.1-2020.12)

Xinchen Zhang (Undergraduate, UCI, 2020.1-2020.6)

Tianyang Zhou (Undergraduate, UCI, 2020.3-2020.6)

Ya Cheng (Undergraduate, UCI, 2020.3-2020.6)

Yongxu Xian (Undergraduate, UCI, 2020.3-2020.6)

Daniel Davies (Undergraduate, UCI, 2019.1-2019.6)

Su In Lee (Undergraduate, I-SURF Program, 2019.6-2019.12)

Yiji Bae (Undergraduate, I-SURF Program, 2019.6-2019.12)

Joohee Kwon (Undergraduate, I-SURF Program, 2019.6-2019.12)

Haotian Hu (Undergraduate, UCI, 2019.10-2019.12)

Last Update: July 2021