

# Lu He

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6136 Donald Bren Hall,  
University of California, Irvine

## Research Interests

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Health informatics, natural language processing, human-computer interaction, social media mining

## Education

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- 2017 – present • **Ph.D., University of California, Irvine** in Informatics  
Advisor: Kai Zheng
- 2013 – 2017 • **B.S., University of Minnesota, Twin Cities** in Computer Science  
With Distinction

## Experience

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- 2020 – present • **AMIA Student Working Group Volunteer**  
Advisors: Katherine Kim, Ph.D., Spyros Kitsiou, Ph.D.  
*Project:* Conducting a systematic literature review on the implementation, adoption and user experience of IoT-based technologies for older adults.
- 2017 – present • **Graduate Research Assistant**  
Department of Informatics  
University of California, Irvine  
Advisors: Kai Zheng, Ph.D., Yunan Chen, Ph.D.  
*Project 1:* Conducted systematic literature reviews on the use of computational tools for healthcare social media studies. Empirically evaluated the validity of tools. [C1].  
*Project 2:* Characterized emergency department frequent attenders using cluster analysis. [C2].  
*Project 3:* Developing mixed-method approaches to mine useful information from online physician reviews. [Under Review]  
*Project 4:* Developing a web application to support easy use and evaluation of sentiment analyzers for health informatics researchers.  
*Project 5:* Analyzing public responses on social media to the COVID pandemic.
- Summer 2018 • **Bioinformatics Programmer**  
Bakar Computational Health Sciences Institute  
University of California, San Francisco  
Supervisor: 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.
- 2016–2017 • **Undergraduate Research Assistant**  
Institute for Health Informatics  
University of Minnesota, Twin Cities  
Advisor: Chih-Lin Chi, Ph.D.  
*Project:* Developed decision tree models for personalized warfarin treatments. [C3].

## Experience (continued)

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- **Undergraduate Research Assistant**  
Institute for Health Informatics  
University of Minnesota, Twin Cities  
Advisor: Rui Zhang, Ph.D.  
*Project:* Developed rule-based and machine learning models to extract supplement use status in clinical notes. [C4,C5].
- **Undergraduate Research Assistant**  
Department of Computer Science and Engineering  
University of Minnesota, Twin Cities  
Advisor: Svetlana Yarosh, Ph.D.  
*Project:* Performed sentiment analysis on journals from an online health community. [J1].

## Research Publications

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### Journal Articles

- 1 Ma, H., Smith, C. E., **He, L.**, Narayanan, S., Giaquinto, R. A., Evans, R., ... Yarosh, S. (2017, December). Write for life: persisting in online health communities through expressive writing and social support. *Proc. ACM Hum.-Comput. Interact.* 1(CSCW), 73:1–73:24. doi:10.1145/3134708

### Conference Proceedings

- 1 **He, L.** & Zheng, K. (2019, forthcoming). How do general-purpose sentiment analyzers perform when applied to health-related online social media data? In *2019 world congress on health and biomedical informatics (medinfo '19)*.
- 2 Shehada, E. R., **He, L.**, Eikey, E., Jen, M., Wong, A., Young, S., & Zheng, K. (2019, forthcoming). Characterizing frequent flyers of an emergency department using cluster analysis. In *2019 world congress on health and biomedical informatics (medinfo '19)*.
- 3 Chi, C.-L., **He, L.**, Kourosh, R., Weissert, J., & Tonellato, P. J. (2018). Using simulation and optimization approach to improve outcome through warfarin precision treatment. In *Pac symp biocomput* (Vol. 23, pp. 412–423).
- 4 Fan, Y., **He, L.**, & Zhang, R. (2017, November). Evaluating automatic methods to extract patients' supplement use from clinical reports. In *2017 ieee international conference on bioinformatics and biomedicine (bibm)* (pp. 1258–1261). doi:10.1109/BIBM.2017.8217839
- 5 Fan, Y., **He, L.**, Serguei, P. V., B, G. M., & Zhang, R. (2017). Classifying Supplement Use Status in Clinical Notes. In *Amia jt summits transl sci proc* (Vol. 2017, pp. 493–501).

### Workshop Abstracts

- 1 Yin, T. & **He, L.** (2019, forthcoming). *Challenges of applying sentiment analysis on health-related social media data. southern california natural language processing symposium (socal 2019)*.

## Teaching

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### University of California, Irvine

2018 Graduate Teaching Assistant, IN4MTX 151 (Project Management).

### University of Minnesota, Twin Cities

2016–2017 Undergraduate Teaching Assistant, CSci 1913 (Introduction to Algorithms and Data Structures).

## Scholarships and Awards

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### University of California, Irvine

2019 Best Poster Award, 1/40 (SoCal NLP Symposium 2019) [W1]  
Best Student Paper Nomination (MedInfo'19) [C1]  
2018 CRA-W Grad Cohort Workshop, Computing Research Association.  
2017 Graduate Dean Recruitment Fellowship, Department of Informatics  
Dean's Award, Department of Informatics.

### University of Minnesota, Twin Cities

2013–2017 Maroon Global Excellence Scholarship  
2014 Undergraduate Special Recognition, Department of German, Nordic, Slavic and Dutch  
2013–2016 Dean's List

## Skills

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Research methods	Qualitative (interviews, wizard-of-oz, user testing, observational study, grounded theory), Quantitative (applied machine learning and deep learning, natural language processing, social network analysis, statistical analysis, generalized linear models, hypothesis testing)
Languages	Mandarin Chinese (Native), English (Full professional proficiency), Japanese (JLPT N3), German (Limited proficiency)
Coding	Python (proficient), Java (medium), R (medium), Matlab (medium), C/C++ (medium), SQL (medium)
Packages and Frameworks	Python (SciPy, NumPy, Pandas, NLTK, Spacy, gensim, scikit-learn, Keras, PyTorch, Django), R (ggplot, tidyverse, tidytext, dplyr, cluster, mltools, sna, igraph)
Databases	MySQL, PostgreSQL
Misc.	L <sup>A</sup> T <sub>E</sub> X, Github, Jupyter Notebook

## Services

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Reviewer AMIA Annual Symposium 2018–2020, AMIA Joint Summit 2019, CHI Late Breaking Work (LBW) 2020, Journal of Medical Internet Research (JMIR) 2019–2020

## Services (continued)

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Volunteer      AMIA Annual Symposium Student Volunteer (2017), AMIA Student Working Group  
Year in Review (YiR) Volunteer (2020)

## Talks and Presentations

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Invited Talks      “Characterizing Frequent Users of Emergency Department Using Cluster Analysis”,  
Medical Intelligence and Innovation Institute (MI<sup>3</sup>), Childrens Hospital of Orange  
County (CHOC), Orange, CA, April 8, 2019

## Mentoring

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Tingjue Yin (Undergraduate, UCI, 2019.3-present) [W1],  
Peilin Gan (Undergraduate, UCI, 2020.1-present),  
Xinchen Zhang (Undergraduate, UCI, 2020.1-present),  
Tianyang Zhou (Undergraduate, UCI, 2020.3-present),  
Ya Cheng (Undergraduate, UCI, 2020.3-present),  
Yongxu Xian (Undergraduate, UCI, 2020.3-present),  
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)