Lu He

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6136 Donald Bren Hall,
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Research Interests

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

Education

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

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. Paper published as [C1].
Project 2: Characterized emergency department frequent attenders using cluster analysis. Paper published as [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. Paper published as [C3].

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. Papers published as [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.
Paper published as [J1].

Research Publications

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

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

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

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.	LaTeX, Github, Jupyter Notebook

Services

Reviwer	AMIA Annual Symposium 2018-2020, AMIA Joint Summit 2019, CHI Late Breaking Work (LBW) 2020, Journal of Medical Internet Research (JMIR) 2019-2020
Volunteer	AMIA Annual Symposium Student Volunteer (2017), AMIA Student Working Group Year in Review (YiR) Volunteer (2020)

Talks and Presentations

Invited Talks	"Characterizing Frequent Users of Emergency Department Using Cluster Analysis", Medical Intelligence and Innovation Institute (MI3), Childrens Hospital of Orange County (CHOC), Orange, CA, April 8, 2019

Mentoring

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)