

# Changye Li

Curriculum Vitae

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## RESEARCH INTEREST

My primary focus lies in advancing the field of natural language processing (NLP) by integrating explainable methods, thereby empowering healthcare professionals and cross-disciplinary researchers to gain valuable insights and confidently interpret NLP models.

## EDUCATION

- Ph.D.            Institute of Health Informatics, University of Minnesota, 2024 (expected)  
Dissertation: *Uncovering the Potential of Large Language Models for the Detection of Cognitive Impairment through Explainable Approaches*  
Committee: Serguei Pakhomov (chair), Genevieve Melton-Meaux, Gyorgy Simon, Trevor Cohen, Maria Gini
- M.S.            Computer Science and Engineering, University of Minnesota, 2018
- B.A.            School of Statistics, University of Minnesota, 2016
- B.S.            Department of Economics, University of Minnesota 2016

## PROFESSIONAL EXPERIENCE

- 2023            Research Intern, Truveta, Bellevue, WA
- 2017            Digital Data Analyst Intern, Padilla, Minneapolis, MN

## RESEARCH EXPERIENCE

- 2020 - 2024    College of Pharmacy, University of Minnesota
- 2019 - 2020    Carlson School of Management, University of Minnesota
- 2017 - 2018    Department of Computer Science and Engineering, University of Minnesota

## PUBLICATIONS

### Peer Reviewed Journal Articles

- Li, C., Xu, W., Cohen, T., & Pakhomov, S. (2024). Useful Blunders: Can Automated Speech Recognition Errors Improve Downstream Dementia Classification? *Journal of Biomedical Informatics*, 104598
- Li, C., Solinsky, J., Cohen, T., & Pakhomov, S. (2024). A Curious Case of Retrogenesis In Language: Automated Analysis of Language Patterns Observed in Dementia Patients and Young Children. *Neuroscience Informatics*, 100155

Pradhan, P. M., **Li, C.**, Shen, Z., & Remucal, M. J. (2022). Comparison of adverse events between COVID-19 and Flu vaccines. *Public Health Review* 5(1).

Guo, Y., **Li, C.**, Roan, C., Pakhomov, S., & Cohen, T. (2021). Crossing the “Cookie Theft” corpus chasm: applying what BERT learns from outside data to the ADReSS challenge dementia detection task. *Frontiers in Computer Science*, 3, 642517.

### Conference Proceedings

**Li, C.**, Xu, W., Cohen, T., Michalowski, M., & Pakhomov, S. (2023). TRESTLE: Toolkit for Reproducible Execution of Speech, Text and Language Experiments. In *American Medical Informatics Association (AMIA) Informatics Summit*.

**Li, C.**, Knopman, D., Xu, W., Cohen, T., & Pakhomov, S. (2022). GPT-D: Inducing Dementia-related Linguistic Anomalies by Deliberate Degradation of Artificial Neural Language Models. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL)* (pp. 1866-1877.) (acceptance rate: 20.8%)

**Li, C.**, Cohen, T., & Pakhomov, S. (2022). The Far Side of Failure: Investigating the Impact of Speech Recognition Errors on Subsequent Dementia Classification. In *Machine Learning for Health (ML4H)*.

**Li, C.**, Levonian, Z., Ma, H., & Yarosh, S. (2018). Condition Unknown: Predicting Patients’ Health Conditions in an Online Health Community. In *ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW)* (pp. 281-284). (acceptance rate 27.3%)

### CONFERENCE ACTIVITY

#### Presentation

Xu, W., **Li, C.**, Cohen, T., & Pakhomov, S. (2023, Mar.) Task-agnostic Linguistic Detection of Alzheimer’s Disease Dementia with Time-series Augmented Representations for Detection of Incoherent Speech (TARDIS). In *AMIA Informatics Summit*

**Li, C.**, Xu, W., Cohen, T., & Pakhomov, S. (2023, Mar.). Investigating the Impact of Speech Recognition Errors on Subsequent Dementia Classification. In *AMIA Informatics Summit*

Li, Y., **Li, C.**, Bart, G., & Zhang, R. (2020). Identifying and predicting risk factors of potential problem opioid use in chronic noncancer pain patients using electronic health records. In *AMIA Annual Summit*.

#### Services

Junior chair    Research roundtable, *Machine Learning for Health (ML4H) 2022*, Nov. 2022

Data hackallenge organizer, The Hackallenge (hackthon + challenge) for detecting Dementia from text and audio data, data challenge organizer. 6th International Workshop on Health Intelligence, *36th Association for the Advancement of Artificial Intelligence Conference on Artificial Intelligence*, March 2022

## **TEACHING EXPERIENCE**

### **University of Minnesota, Teaching Assistant**

Python Programming Essentials for the Health Sciences (fall 2022)

Foundations of Biomedical Natural Language Processing (spring 2021)

### **University of Minnesota, Student Group, Sole Instructor**

Introduction to GitHub (fall 2022)

Introduction to Python (spring 2022, fall 2021)

## **PROFESSIONAL SERVICE**

### **Peer Review**

AMIA Informatics Summit, 2023, 2024

AMIA Annual Symposium, 2023

ML4H 2023

Computational Linguistics and Clinical Psychology (CLPsych) Workshop of the European Chapter of the Association for Computational Linguistics (EACL) 2024

ACL 2024