

KOYENA PAL

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EDUCATION

- Northeastern University** 2022 – 2027
Doctor of Philosophy, Computer Science
- GPA: 4.0/4.0
- Advisor: Dr. David Bau and Dr. Renée Miller
- Research Areas: Interpretable AI, NLP, Data Science
- Brown University** 2021 – 2022
Master of Science, Computer Science
- GPA: 4.0/4.0
- Thesis: Summarization and Generation of Discharge Summary Medical Reports
- Thesis Advisor: Dr. Carsten Eickhoff
- Brown University** 2017 – 2021
Bachelor of Science, Computer Science, Honors
- GPA: 3.8/4.0
- Thesis: The Effect of Multi-Document Summarizations on User SERP Experience
- Thesis Advisor: Dr. Carsten Eickhoff
- Concentration Advisor: Dr. Ugur Cetintemel

PEER-REVIEWED PUBLICATIONS

1. [Koyena Pal](#), Aamod Khatiwada, Roe Shraga and Renée J. Miller (2024). UGEN: Benchmarking Table Union Search using Large Language Models. *VLDB 2024 Workshop: Tabular Data Analysis Workshop (TaDA)*.
2. [Koyena Pal](#), Jiuding Sun, Andrew Yuan, Byron C. Wallace, & David Bau (2023). Future Lens: Anticipating Subsequent Tokens from a Single Hidden State. *SIGNLL Conference on Computational Natural Language Learning (CoNLL)*.
3. C. Meyer, D. Adkins, [K. Pal](#), R. Galici, A. Garcia-Agundez, and C. Eickhoff, “Neural text generation in regulatory medical writing,” *Frontiers in Pharmacology*, vol. 14, 2023, doi: 10.3389/fphar.2023.1086913.
4. [K. Pal](#), S. Adepu and J. Goh, “Effectiveness of Association Rules Mining for Invariants Generation in Cyber-Physical Systems,” *2017 IEEE 18th International Symposium on High Assurance Systems Engineering (HASE)*, 2017, pp. 124-127, doi: 10.1109/HASE.2017.21.

PRE-PRINT PUBLICATIONS

1. [Koyena Pal](#), David Bau, and Renée J. Miller. 2024. Model Lakes.
2. [Koyena Pal](#), Seyed Ali Bahrainian, Laura Mercurio, and Carsten Eickhoff. 2023. Neural Summarization of Electronic Health Records.

RESEARCH EXPERIENCE

- Northeastern University** Sept 2022 - Present
PhD Student Researcher Boston, MA
- Interpretable AI + NLP: Explored ways to predict distant tokens of a Large Language Model (LLM) through single hidden token representations. (Published at CoNLL 2023)

- Database + AI: Explored ways to create harder benchmarks and simpler solutions for database problems using LLMs. (Accepted at TaDA @VLDB 2024)
- Database + AI: Creating a vision for future research on model lakes, as an extension to a popular concept in database known as data lakes, to better understand and organize AI models in model sharing platforms. (Initial draft on arXiv: Model Lakes)

Brown University

Student Researcher

Sept 2019 - Present

Providence, RI

- AI + Healthcare: Developed a patient-centric literature summarization mechanism by implementing NLP models on biomedical texts.
- AI + HCI: Conducted user study on the effect of multi-document summarizations on User Search Results Page (SERP) experience.

iTrust Centre at Singapore University of Technology and Design

Research Intern

April 2016 - Jan 2017

Singapore

- AI + Cyber Security: Proposed a novel method to detect cyber-attacks on a Cyber-Physical System.

INDUSTRY EXPERIENCE

Akamai Technologies

Information Security Intern

Jan 2022 - May 2022

Cambridge, MA

- Created text summarization and recommender systems for a threat-intelligence dashboard

Akamai Technologies

Information Security Intern

May 2020 - August 2020

Cambridge, MA

- Designed and deployed UI features to achieve consistent language interpretation in Technical Risk Illuminator, a tool built to support executive decisions.
- Conceptualized and modeled an NLP-based multiple-tag generator to identify key terms and types of incidents from cyber-incident reports.

Akamai Technologies

Information Security Intern

May 2019 - August 2019

Cambridge, MA

- Optimized the yearly audit process duration by building a systems register, which generates answers that business units require to show that they are PCI Compliant.
- Revamped the PCI Gap Analysis Template to streamline the process of products entering the PCI Compliance program for the first time.

Brown University

Information Security Analyst Intern

May 2018 - July 2018

Providence, RI

- Substantially improved copyright ticketing process automation through network expansion in support of internal IP address, MAC address, and public IP username identification.

HONORS AND AWARDS

Northeastern Graduate Fellowship

2022-2027

Northeastern Startup Fund

2022

Brown CS Scholarship for Richard Tapia Conference

2021

Brown University Undergraduate Honors Award

2021

Brown Undergraduate Teaching Assistant-ship

2019

Top 3 Best Student Paper Award @ IEEE 18th HASE Conference

2017

TEACHING AND RESEARCH MENTORSHIP

Northeastern University

Graduate TA

Sept 2022 - Dec 2022

Boston, MA

- CSCI 7150: Deep Learning, with Dr. David Bau (Fall 2022)

Brown University

*Teaching Assistant (TA) and Head TA**

Dec 2018 - Dec 2020

Providence, RI

- CSCI 1470* and 2470*: Deep Learning, with Dr. Daniel Ritchie (Fall 2020)
- CSCI 1010: Theory of Computation, with Dr. Lorenzo De Stefani (Fall 2019)
- CSCI 0220: Introduction to Discrete Structures and Probability, with Dr. Caroline J Klivans (Spring 2019)
- CSCI 0170: Computer Science – An Integrated Introduction, with Dr. Philip N. Klein (Fall 2018)

Inspirit AI

Instructor

July 2020 - August 2020, Dec 2021

Online

- Conducted online lectures and coding assignments covering concepts such as machine learning fundamentals, NLP, computer vision, and ethics in AI.
- Guided global group of students through AI projects such as Anti-Refugee Semantic Analysis.

INVITED TALKS

“Opening AI’s Black Box with Prof. David Bau, Koyena Pal, and Eric Todd of Northeastern University”. The Cognitive Revolution Podcast, Boston, MA, April 2024.

- Mechanistic Interpretability Reading Seminar, Discord, Online, Jan 2024

SERVICE

Reviewer @ NeurIPS

2024

Comms Sub-Chair @ CHIL 2024

2023-Present

Mentor @ Brown University’s Women Launch Pad

2022-Present

Reviewer @ JAMIA

2023

Reviewer @ Northeastern University’s CS PhD Admissions Committee

2022

Mentor @ Brown University’s Women in Computer Science

2018-2022