

# KOYENA PAL

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## EDUCATION

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<b>Northeastern University</b> <i>Doctor of Philosophy, Computer Science</i>	Sept 2022 – May 2027
- GPA: 4.0/4.0	
- Thesis Proposal: Model Lakes (website)	
- Co-Advisor: Dr. David Bau, Assistant Professor of CS @ Northeastern	
- Co-Advisor: Dr. Renée Miller, Canada Excellence Research Chair in Data Intelligence @ Waterloo. (former University Distinguished Professor @ Northeastern)	
- Research Areas: Interpretable AI, NLP, Data Science	
 <b>Brown University</b> <i>Master of Science, Computer Science</i>	Aug 2021 – May 2022
- GPA: 4.0/4.0	
- Thesis: Summarization and Generation of Discharge Summary Medical Reports	
- Thesis Advisor: Dr. Carsten Eickhoff, Director of Health NLP Lab @ University of Tübingen	
 <b>Brown University</b> <i>Bachelor of Science, Computer Science, Honors</i>	Aug 2017 – May 2021
- GPA: 3.8/4.0	
- Thesis: The Effect of Multi-Document Summarizations on User SERP Experience	
- Thesis Advisor: Dr. Carsten Eickhoff, Director of Health NLP Lab @ University of Tübingen	

## PEER-REVIEWED PUBLICATIONS

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1. Dmitrii Troitskii\*, Koyena Pal\*, Chris Wendler, Callum Stuart McDougall. Internal States before Wait Modulate Reasoning Patterns. *Conference on Empirical Methods in Natural Language Processing (EMNLP) Findings*. 2025.
2. Aaron Mueller, Jannik Brinkmann, Millicent Li, Samuel Marks, Koyena Pal, Nikhil Prakash, Can Rager, Aruna Sankaranarayanan, Arnab Sen Sharma, Jiuding Sun, Eric Todd, David Bau, Yonatan Belinkov. The Quest for the Right Mediator: A History, Survey, and Theoretical Grounding of Causal Interpretability. *Computational Linguistics*. 2025.
3. Koyena Pal, David Bau, and Renée J. Miller. 2024. Model Lakes. *28th International Conference on Extending Database Technology (EDBT)*. 2025.
4. Jaden Fiotto-Kaufman, Alexander R Loftus, Eric Todd, Jannik Brinkmann, Caden Juang, Koyena Pal, Can Rager, Aaron Mueller, Samuel Marks, Arnab Sen Sharma, Francesca Lucchetti, Michael Ripa, Adam Belfki, Nikhil Prakash, Sumeet Multani, Carla Brodley, Arjun Guha, Jonathan Bell, Byron Wallace, David Bau NNsight and NDIF: Democratizing Access to Foundation Model Internals. *The Thirteenth International Conference on Learning Representations (ICLR)*. 2025.
5. Koyena Pal, Aamod Khatiwada, Roee Shraga and Renée J. Miller (2024). ALT-GEN: Benchmarking Table Union Search using Large Language Models. *VLDB 2024 Workshop: Tabular Data Analysis Workshop (TaDA)*. 2024. [Best Long Paper]
6. 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)*. 2023.

7. C. Meyer, D. Adkins, K. Pal, R. Galici, A. Garcia-Agundez, and C. Eickhoff , “Neural text generation in regulatory medical writing,” *Frontiers in Pharmacology*. 2023
8. 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. [Top 3 Best Student Paper Presentation]

## PRE-PRINT PUBLICATIONS

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1. Koyena Pal, Seyed Ali Bahrainian, Laura Mercurio, and Carsten Eickhoff. 2023. Neural Summarization of Electronic Health Records.

## RESEARCH EXPERIENCE

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### **Cambridge-Alignment Boston Initiative (CBAI)**

*Fellow*

June 2025 - Aug 2025

*Cambridge, MA*

- Mentor: Chandan Singh, Senior Researcher @ Microsoft
- Interpretable AI: Evaluated the generalizability of Chain-of-Thought reasoning across Large Reasoning Models to determine if one model’s CoT can guide another to the same answer. (In submission)

### **Northeastern University**

*PhD Student Researcher*

Sept 2022 - Present

*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. (Best Long Paper at TaDA @ VLDB 2024)
- Database + AI: A vision for future research on model lakes, as an extension to a popular concept in database known as data lakes, that enables model search and understanding in model sharing platforms. (Published at EDBT 2025)

### **Brown University**

*Student Researcher*

Sept 2019 - Sept 2022

*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

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### **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.
- Modeled a multiple-tag generator to identify key terms and incidents types from cyber-incident reports.

- Akamai Technologies** May 2019 - August 2019  
*Information Security Intern* 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** May 2018 - July 2018  
*Information Security Analyst Intern* Providence, RI
- Substantially improved copyright ticketing process automation through network expansion in support of internal IP address, MAC address, and public IP username identification.

## TEACHING AND RESEARCH MENTORSHIP

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- Northeastern University** Sept 2022 - Dec 2022  
*Graduate TA* Boston, MA
- CSCI 7150: Deep Learning, with Dr. David Bau (Fall 2022)
- Brown University** Dec 2018 - Dec 2020  
*Teaching Assistant (TA) and Head TA \** 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: Intro 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)  
Organized 35 TAs teaching 350+ students. Developed course materials, managed course logistics, led weekly labs, graded student work and held office hours.

- Inspirit AI** July 2020 - August 2020, Dec 2021  
*Instructor* 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 AND MEDIA COVERAGE

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- “Northeastern mechanistic interpretability workshop aims to make sense of AI systems”, November 2025
- “All the AI risks we cannot see”, Jan 2025
- DS4440: Practical Neural Networks @ Northeastern University, Boston, MA, Nov 2024
- “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

## HONORS AND AWARDS

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<b>Northeastern Graduate Fellowship</b>	2022-2027
<b>Cambridge-Boston Alignment Initiative Fellow</b>	2025
<b>Microsoft EDBT Fellowship</b>	2025
<b>Best Long Paper @ VLDB TaDA Workshop</b>	2024
<b>Northeastern Startup Fund</b>	2022
<b>Brown CS Scholarship for Richard Tapia Conference</b>	2021

Brown University Undergraduate Honors Award	2021
Brown Undergraduate Teaching Assistant-ship	2019
Top 3 Best Student Paper Award @ IEEE 18th HASE Conference	2017

## ORGANIZED WORKSHOPS AND CONFERENCE

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2nd New England Mechanistic Interpretability Workshop	2025
1st New England Mechanistic Interpretability Workshop	2024
Conference on Health, Inference, and Learning (CHIL)	2024

## SERVICE

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Reviewer @ ICLR	2026
Reviewer @ AAAI	2025
Reviewer @ NeurIPS	2024,2025
Reviewer @ ICML Actionable Interpretability Workshop	2025
Reviewer @ ICML	2025
Reviewer @ NeurIPS Interpretable AI Workshop	2024
Reviewer @ CoNLL	2024
Mentor @ Brown University's Women Launch Pad	2022-Present
Booth Host @ SOURCE	2023
Reviewer @ JAMIA	2023
Reviewer @ Northeastern University's CS PhD Admissions Committee	2022
Mentor @ Brown University's Women in Computer Science	2018-2022