

# KOYENA PAL

Northeastern University ◇ Boston, MA 02115  
(401) · 226 · 7477 ◇ pal.k@northeastern.edu ◇ koyenapal.github.io

## EDUCATION

---

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

## RESEARCH EXPERIENCE

---

- |   |  |
|---|--|
| <b>Northeastern University</b><br><i>PhD Student Researcher</i>   | Sept 2022 - Present<br><i>Boston, MA</i>     |
| <ul style="list-style-type: none"><li>· Interpretable AI + NLP: Explored ways to predict future states of a Large Language Model (LLM) through single hidden token representations. (Paper in submission)</li><li>· Database + AI: Exploring ways to create harder benchmarks and simpler solutions for database problems using LLMs. (Paper in submission)</li></ul> |  |
| <b>Brown University</b><br><i>Student Researcher</i>  | Sept 2019 - Present<br><i>Providence, RI</i> |
| <ul style="list-style-type: none"><li>· AI + Healthcare: Developed a patient-centric literature summarization mechanism by implementing NLP models on biomedical texts.</li><li>· AI + HCI: Conducted user study on the effect of multi-document summarizations on User Search Results Page (SERP) experience.</li></ul>  |  |
| <b>iTrust Centre at Singapore University of Technology and Design</b><br><i>Research Intern</i>   | April 2016 - Jan 2017<br><i>Singapore</i>    |
| <ul style="list-style-type: none"><li>· AI + Cyber Security: Proposed a novel method to detect cyber-attacks on a Cyber-Physical System.</li></ul>  |  |

## PEER-REVIEWED PUBLICATIONS

---

1. 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.

2. 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, Seyed Ali Bahrainian, Laura Mercurio, and Carsten Eickhoff. 2023. Neural Summarization of Electronic Health Records.
2. Koyena Pal, Aamod Khatiwada, Roe Shraga, and Renée J. Miller. 2023. Generative Benchmark Creation for Table Union Search.

## 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.

**SKILLS**

---

<b>Programming Languages:</b>	Python, Ruby, SQL, Java, C, C++, Scala, Go, DrRacket, OCaml, Latex, React, MATLAB, Javascript, HTML, CSS
<b>Software, OS &amp; Tools:</b>	GitHub, BitBucket, Heroku, MongoDB, MySQL, REST API, JIRA, Pandas, Numpy, Gensim, scikit-learn, Google Apps, MS Office Suite, Google Apps, Qt Creator, OS X, Linux
<b>Languages:</b>	English, French, Hindi, Bengali

**RELEVANT COURSES**

---

Machine Learning, Deep Learning, User Interface and User Experience, CS for Social Good, Design and Analysis of Algorithms, Software Security, Computer Systems Security, Privacy-Conscious Computer Systems

**SERVICE**

---

<b>Reviewer @ Northeastern University's CS PhD Admissions Committee</b>	2022
<b>Mentor @ Brown University's Women Launch Pad</b>	2022-Present
<b>Mentor @ Brown University's Women in Computer Science</b>	2018-2022

**ACTIVITIES AND SOCIETIES**

---

Northeastern's CS PhD Group, Brown's DAEBAK K-Pop Dance Association, Bengali Students' club, Hack@Brown, Peer mentoring, Playing Tennis, Playing Piano, Traveling