Pritom Saha Akash

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EDUCATION

University of Illinois at Urbana-Champaign	IL, USA
Ph.D. in Computer Science [Expected Graduation -May 2025]	*Aug. 2020 – Present*
Institute of Information Technology, University of Dhaka	Dhaka, Bangladesh
B.S and M.S. in Software Engineering	*Jan. 2014 – June 2019*

RESEARCH INTERESTS

Natural Language Processing (i.e., understanding and using LLMs), **Text Mining** and **Recommender Systems**.

EXPERIENCE

Applied Scientist Intern — May 2024 – Aug. 2024
Amazon Prime Video & Studios CoreTech — *Seattle, WA, USA*
- **Topic**: LLM in Recommender System

PhD Student Researcher — Sep. 2022 – Present
Co-op of CS@UIUC and eBay Inc. — *IL, USA*
- **Topic**: Recommender System

Graduate Teaching Assistant — Aug. 2023 – Present
Dept. of CS, University of Illinois at Urbana-Champaign — *IL, USA*
- **Courses**: STAT 107- Data Science Discovery, CS 598: Understanding and Using LLMs

Research Scientist Intern - Artificial Intelligence — May 2023 – Aug. 2023
Almaden Lab, IBM Research — *San Jose, CA, USA*
- **Topic**: Conversational AI and Long-form QA

Graduate Research Assistant — Aug. 2020 – May 2023
University of Illinois at Urbana-Champaign — *IL, USA*
- **Collaborations**: IBM- Aug.'20 – Dec'21 (Topic: NextGen Search), Aug.'22 – May'23 (Topic: AIOps)
- **Advisor**: Prof. Kevin C. Chang

Software Engineer — Nov. 2019 – Aug. 2020
Samsung R&D Institute Bangladesh — *Dhaka, Bangladesh*
- Developing Samsung wearable applications in Tizen platform

Short Course Instructor — Jan. 2018 – Sep. 2019
Institute of Information Technology, University of Dhaka — *Dhaka, Bangladesh*
- Worked as an instructor in short courses of Web Programming, Web design and Office application

Software Engineer Intern — Jan. 2017 – June 2017
Datasoft System Bangladesh Limited — *Dhaka, Bangladesh*
- Involved in developing two in-house automation projects

PUBLICATIONS

1. Lam Do, **Pritom Saha Akash**, Kevin Chen-Chuan Chang. Unsupervised Open-domain Keyphrase Generation. The 61st Annual Meeting of the Association for Computational Linguistics (ACL). 2023.

2. **Pritom Saha Akash**, Jie Huang, Kevin Chen-Chuan Chang. Coordinated Topic Modeling. The 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP). 2022

3. **Pritom Saha Akash**, Jie Huang, Kevin Chen-Chuan Chang, Yunyao Li, Lucian Popa, ChengXiang Zhai. Domain Representative Keywords Selection: A Probabilistic Approach. *Findings of the 60th Annual Meeting of the Association for Computational Linguistics (Findings of ACL). 2022.*

4. Md. Eusha Kadir, **Pritom Saha Akash**, Sadia Sharmin, Amin Ahsan Ali, and Mohammad Shoyaib. A Proximity Weighted Evidential k Nearest Neighbor Classifier for Imbalanced Data. *In Pacific-Asia Conference on Knowledge Discovery and Data Mining, pp. 71-83. Springer, Cham, 2020.*

5. Md. Eusha Kadir*, **Pritom Saha Akash***, Sadia Sharmin, Amin Ahsan Ali, and Mohammad Shoyaib. Can a Simple Approach Identify Complex Nurse Care Activity? *In Adjunct Proceedings of the 2019 ACM International Joint Conference on Pervasive and Ubiquitous Computing and the 2019 International Symposium on Wearable Computers (UbiComp/ISWC '19 Adjunct)* [*Equal Contribution]

6. **Pritom Saha Akash**, Md. Eusha Kadir, Amin Ahsan Ali and Mohammad Shoyaib. Inter-node Hellinger distance based Decision Tree, *In Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence, IJCAI-19.*

7. **Pritom Saha Akash**, Md. Eusha Kadir, Amin Ahsan Ali, Md. Nurul Ahad Tawhid and Mohammad Shoyaib. Introducing Confidence as a Weight in Random Forest. *2019 International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST).* [Best Presenter Award]

8. **Pritom Saha Akash**, Ali Zafar Sadiq and Ahmedul Kabir. An Approach of Extracting God Class Exploiting Both Structural and Semantic Similarity. *ENASE 2019 : 14th International Conference on Evaluation of Novel Approaches to Software Engineering.*

9. Jeba, Tahmim, Tarek Mahmud, **Pritom Saha Akash**, and Nadia Nahar. God Class Refactoring Recommendation and Extraction Using Context based Grouping.

10. Md. Eusha Kadir, **Pritom Saha Akash**, Amin Ahsan Ali, Mohammad Shoyaib and Zerina Begum. Evidential SVM for binary classification. *ICASERT-2019: 1st International Conference on Advances in Science, Engineering and Robotics Technology.*

11. Ali Zafar Sadiq, Ahmedul Kabir, **Pritom Saha Akash** and Md. Jubair Ibna Mostafa. Analyzing Corrective Maintenance using Change Coupled Clusters at Fix-inducing Changes. *2019 International Conference on Electrical, Computer and Communication Engineering (ECCE).*

PREPRINTS AND UNDER REVIEW

1. Qihao Wang*, **Akash, Pritom Saha***, Varvara Kollia, Biwei Jiang, Vadim Von Brzeski, Kevin Chen-Chuan Chang. On Category Recommendation: A Cascading Approach. [On Review, KDD'25 (Resubmit)]

2. **Akash, Pritom Saha**, Jie Huang, and Kevin Chen-Chuan Chang. "Let the Pretrained Language Models" Imagine" for Short Texts Topic Modeling." arXiv preprint arXiv:2310.15420 (2023). [On Review, EMNLP'24]

3. Kashob Kumar Roy, **Akash, Pritom Saha**, Lucian Popa, and Kevin Chen-Chuan Chang. "ConTReGen: Context-driven Tree-structured Retrieval for Open-domain Long-form Text Generation." [On Review, EMNLP'24]

4. Youan Cong, Cheng Wang, **Akash, Pritom Saha**, and Kevin Chen-Chuan Chang. "Query Optimization for Parametric Knowledge Refinement in Retrieval-Augmented Large Language Models" [On Review, EMNLP'24]

5. **Akash, Pritom Saha***, Kashob Kumar Roy*, Lucian Popa, and Kevin Chen-Chuan Chang. "Long-form Question Answering: An Iterative Planning-Retrieval-Generation Approach." arXiv preprint arXiv:2311.09383 (2023).

6. **Akash, Pritom Saha***, Trisha Das*, and Kevin Chen-Chuan Chang. "TopicAdapt-An Inter-Corpora Topics Adaptation Approach." arXiv preprint arXiv:2310.04978 (2023).

7. **Akash, Pritom Saha**, and Kevin Chen-Chuan Chang. "Exploring variational graph auto-encoders for extract class refactoring recommendation." arXiv preprint arXiv:2203.08787 (2022).

8. **Akash, Pritom Saha**, Wei-Cheng Lai, and Po-Wen Lin. "Online aggregation based approximate query processing: A literature survey." arXiv preprint arXiv:2204.07125 (2022).

Teaching

Co-Instructor of CS 598: Understanding and Using Large Language Models, Spring '24, Fall '24 (Upcoming)
UIUC

Master's Thesis

- **Pritom Saha Akash**, An Evidential Inter-node Hellinger Distance based Tree Classifier, *Institute of Information Technology, University of Dhaka, 2019.*

Awards & Grants

1. IIT Academic Excellence Gold Medal Award, 2019
2. 2019 IEEE Computer Society Bangladesh Chapter's Award for Academic & Research Excellence in recognition of Outstanding Research Accomplishments
3. Winner in a Human activity recognition challenge called *NURSE CARE ACTIVITY RECOGNITION CHALLENGE* as a part of HASCA workshop at Ubicomp 2019
4. Awarded for *IJCAI-AIJ 2019 TRAVEL and ACCESSIBILITY GRANT*
5. Awarded as the best presenter in an international conference, ICREST 2019
6. Awarded as an ICT fellow (2018-19) under ICT Division Bangladesh

Senior Project

Context Sensitive Bengali Spell Checker   Jul. 2017 - Nov. 2017
- A Bengali Spell Checker for detecting and recommending corrections of typographic and contextual errors
- Developed using Python 3.5 and Django 1.11.2

Undergraduate Projects

Context Sensitive Bengali Spell Checker   Jul. 2017 - Nov. 2017
- A Bengali Spell Checker for detecting and recommending corrections of typographic and contextual errors
- Developed using Python 3.5 and Django 1.11.2

Graduate Verification System   Aug. 2017 - Oct. 2017
- A web-based system for verification of a graduate
- Developed using PHP, Laravel and MySQL

Budget Planning System   Sept. 2016 - Nov. 2016
- A web-based system for planning yearly budget of IIT, University of Dhaka
- Developed using PHP and MySQL

Home Budget Manager   Feb. 2015 - May 2015
- An Android application to set budget and track your earnings-expenses
- Developed using Java, Android Studio 1.0 and SQLite

Aditional Information

Reviewer: EMNLP'23,24; ACL'23,24
Co-Reviewer: KDD'21,22,23,24; SIGIR'21,22,23,24; CIKIM'21; ICDM'21; WSDM'21

Technical Skills

Programming: Python, Java, Matlab, C/C++, MySQL, JavaScript, R
Software and Tools: PyTorch, scikit-learn, Git, LaTex, IntelliJ, Eclipse, Android Studio