

Geetanjali Bihani

Email: bihani.geet@gmail.com | Website: <https://www.gbihani.com/> | Google Scholar: scholar.google.com/gbihani

EDUCATION

Ph.D., Computer and Information Technology <i>Purdue University, West Lafayette, USA</i> Dissertation: <i>On the Reasoning Capabilities of LLMs for Detecting Grooming and Coercive Discourse</i> Advisor: Dr. Julia Taylor Rayz Committee: Dr. Victor Raskin, Dr. Baijian Yang, Dr. Jin Wei Kocsis, Dr. Tatiana Ringenberg	2020 – 2025
M.S., Computer and Information Technology <i>Purdue University, West Lafayette, USA</i> Thesis: <i>Longitudinal Comparison of Word Associations in Shallow Word Embeddings</i> Advisor: Dr. Julia Taylor Rayz	2018 – 2020
B.Tech., Electronics and Communications Engineering <i>Delhi Technological University, Delhi, India</i>	2012 – 2016

RESEARCH EXPERIENCE

School of Applied and Creative Computing, Purdue University (West Lafayette, IN) Visiting Scholar	Spring 2026
Applied Knowledge Representation and Natural Language Understanding Lab (West Lafayette, IN) Research Assistant	2020 – 2025
iAGREE Labs (West Lafayette, IN) Research Assistant	2018 – 2019

INDUSTRY EXPERIENCE

Microsoft Research (Redmond, WA) <i>Research Intern</i> (hosted by the Knowledge Technologies and Intelligent Experiences Team) - Built a scalable LLM-based framework to semantically parse documents and infer templates, achieving 96% alignment with expert human annotations - Automated compliance workflows through intelligent document sorting, reducing latency by 5%	Summer 2023
Microsoft Research (Redmond, WA) <i>Research Intern</i> (hosted by the Knowledge Technologies and Intelligent Experiences Team) - Developed document classifiers leveraging templatic structure, improving template identification accuracy by 18% over prior baselines - Designed a novel document embedding method to represent templatic patterns, achieving 98% alignment with human annotations	Summer 2022
Transorg Analytics (Delhi, India) <i>Data Scientist</i> - Designed and implemented a social network analysis model for churn prediction, achieving an 8% performance improvement over previous models - Developed machine learning models to optimize product recommendations, boosting customer retention by 20% and increasing monthly profits by \$300K	2016 – 2018

HONORS AND AWARDS

A.H. Ismail Interdisciplinary Travel Support Grant. <i>Purdue University.</i> Amount: \$1000	2025
---	------

Graduate Student Travel Grant. <i>PPI Dean's Office.</i> Amount: \$2000	2025
Travel Grant Award. <i>CIT Graduate Student Association.</i> Amount: \$500	2024
Third Place. <i>Holistic Safety and Security Research Symposium, Purdue Polytechnic Institute.</i>	2024
Holistic Safety and Security Research Travel Grant. <i>Purdue Polytechnic Institute.</i> Amount: \$250	2023
CIT Research Travel Grant Award. <i>Purdue Polytechnic Institute.</i> Amount: \$400	2022
Best Poster (runner-up). <i>Holistic Safety and Security Research Symposium, Purdue Polytechnic Institute.</i>	2022
Dean's Graduate Student Travel Grant. <i>Purdue Polytechnic Institute.</i> Amount: \$250	2022
Purdue Graduate Student Government Travel Grant. <i>Purdue University.</i> Amount: \$500	2022
Holistic Safety and Security Research Travel Grant. <i>Purdue Polytechnic Institute.</i> Amount: \$250	2022
Ross-Lynn Graduate Student Fellowship. <i>Purdue Research Foundation.</i>	2021
Second Place. <i>Holistic Safety and Security Research Symposium, Purdue Polytechnic Institute.</i>	2021
National Science Foundation (NSF) I-Corps Teams National Award.	2019

TEACHING EXPERIENCE

Purdue CNIT 422: Cyber Criminology, Guest Instructor Spring 2026

Developed and delivered lectures bridging NLP techniques with cyber criminology. Topics include machine learning pipeline for cybercrime detection, data collection, model development for identifying scams, child exploitation, and cyberbullying, deployment, and safety-critical evaluation.

Purdue CNIT 519: Natural Language Technologies, Guest Instructor Spring 2022 – Fall 2024

Developed and delivered lectures on theoretical foundations of developments in natural language processing. Topics include n-gram models, RNNs/LSTMs, Transformer architectures, causal and masked language models, and word-sense representations.

Purdue CNIT 322: Research Methodology and Design, Guest Instructor Spring 2023

Developed and delivered lectures on NLP research methodologies. Topics include data collection, experimental design, evaluation metrics, statistical significance testing, reproducibility practices, and ethical considerations in NLP research.

PUBLICATIONS

- Damin Zhang, Yi Zhang, **Geetanjali Bihani**, and Julia Rayz. [Hire Me or Not? Examining Language Model's Behavior with Occupation Attributes](#). - In *Proceedings of the 31st International Conference on Computational Linguistics (COLING 2025)*, pages 7891–7911. Association for Computational Linguistics.
- **Geetanjali Bihani** and Julia Rayz. [The Reliability Paradox: Exploring How Shortcut Learning Undermines Language Model Calibration](#). - In *Proceedings of the 58th Hawaii International Conference on System Sciences (HICSS 2025)*, pages 856–865.
- **Geetanjali Bihani**, Julia Taylor Rayz. [Learning Shortcuts: On the Misleading Promise of NLU in Language Models](#). In *Artificial Intelligence for Design and Process Science*, pages 147-158. Cham: Springer Nature Switzerland, 2025.
- **Geetanjali Bihani**, Tatiana Ringenberg, and Julia Taylor Rayz. [Evaluating Language Models on Grooming Risk Estimation Using Fuzzy Theory](#). In *Proceedings of the NAFIPS International Conference on Fuzzy Systems, Soft Computing, and Explainable AI (NAFIPS 2024)*.
- **Geetanjali Bihani** and Julia Taylor Rayz. [A Fuzzy Evaluation of Sentence Encoders on Grooming Risk Classification](#). In *Proceedings of the NAFIPS International Conference on Fuzzy Systems, Soft Computing, and Explainable AI (NAFIPS 2024)*. **Received Outstanding Student Paper Award.**
- **Geetanjali Bihani**, Julia Taylor Rayz. [Calibration Error Estimation Using Fuzzy Binning](#). In Cohen, K., Ernest, N., Bede, B., Kreinovich, V. (eds) *Fuzzy Information Processing 2023. NAFIPS 2023. Lecture Notes in Networks and Systems*, vol 751. Springer, Cham. **Honorable Mention for Best Student Paper.**

- **Geetanjali Bihani**, Julia Taylor Rayz. [On Information Hiding in Natural Language Systems](#). In *The International FLAIRS Conference Proceedings*, vol. 35. 2022.
- Huijeong Kim, Sangwoo Ham, Marlen Promann, Hemanth Devarapalli, **Geetanjali Bihani**, Tatiana Ringenberg, Vanessa Kwarteng, Ilias Bilionis, James E. Braun, Julia Taylor Rayz, Leigh Raymond, Torsten Reimer, Panagiota Karava. [MySmartE – An eco-feedback and gaming platform to promote energy conserving thermostat-adjustment behaviors in multi-unit residential buildings](#). In *Building and Environment* 221 (2022): 109252.
- **Geetanjali Bihani**. [Interpretable Privacy Preservation of Text Representations Using Vector Steganography](#). In *Proceedings of the AAAI Conference on Artificial Intelligence*, 36(11), 12872-12873.
- **Geetanjali Bihani**, Julia Taylor Rayz. [Low Anisotropy Sense Retrofitting \(LASER\) : Towards Isotropic and Sense Enriched Representations](#). In *Proceedings of Deep Learning Inside Out (DeeLIO): The 2nd Workshop on Knowledge Extraction and Integration for Deep Learning Architectures*, pages 81–95. Association for Computational Linguistics.
- **Geetanjali Bihani**, Julia Taylor Rayz. [Fuzzy Classification of Multi-intent Utterances](#). In *Explainable AI and Other Applications of Fuzzy Techniques: Proceedings of the 2021 Annual Conference of the North American Fuzzy Information Processing Society, NAFIPS 2021*, pp. 37-51. Springer International Publishing, 2022.
- **Geetanjali Bihani**, Julia Taylor Rayz. [Model Choices Influence Attributive Word Associations: A Semi-supervised Analysis of Static Word Embeddings](#). *Proceedings of the 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology*.

PRESENTATIONS & PANELS

<i>The State of AI Slop (Invited Panel)</i> The 66 th Messaging/Mobile/Malware Anti-Abuse Working Group (M ³ AAWG) General Meeting.	Spring 2026 San Diego, CA
<i>Bridging the Gap: Advancing AI to Detect Covert Harms</i> Hawaii International Conference on System Sciences.	Spring 2025 Big Island, HI
<i>Detecting Online Grooming Risk Using Transformers</i> Holistic Safety and Security Research Symposium.	Spring 2024 Purdue University
<i>Automatic Induction of Interpretable Document Templates (Invited Talk)</i> Microsoft Research.	Fall 2023 Redmond, WA
<i>Text Augmentation: Improving Classification Accuracy at the Expense of Calibration?</i> CERIAS Security Symposium.	Spring 2023 Purdue University
<i>How do next-generation researchers see Mode 2 science? (Invited Panel)</i> International Workshop of the Society of Design and Process Science.	Spring 2023 Montreal (held online)
<i>Automatic Template Discovery (Invited Talk)</i> Microsoft Research.	Fall 2022 Redmond, WA
<i>Interpretable Privacy Preservation of Text Representations Using Vector Steganography</i> AAAI Doctoral Consortium.	Spring 2022 Vancouver (held online)
<i>Language, Representations and Leakage (Invited Talk)</i> Resilient Advanced Infrastructure & Systems Engineering Lab	Spring 2022 Syracuse University
<i>Permutation-based Privacy in Text Vectors.</i> CERIAS Security Symposium.	Spring 2022 Purdue University
<i>Towards Isotropic and Sense Enriched Representations.</i> The 2 nd Workshop on Knowledge Extraction and Integration for Deep Learning Architectures, NAACL-HLT	Spring 2021 (held online)

TECHNICAL SKILLS

Programming: Python, SQL, R, Git, Linux

Libraries: PyTorch, TensorFlow, DeepSpeed, LangChain, HuggingFace, Scikit-learn, NLTK, Pandas, NumPy, Keras

Visualization: Matplotlib, Seaborn, Plotly, Procreate, W&B

REVIEWING

The 11th International Conference on Learning Representations (ICLR)	2023
The 61st Annual Meeting of the Association for Computational Linguistics (ACL)	2023
Spring Undergraduate Research Conference, Purdue University	2022
International Conference on Cyberworlds (CW)	2021

LEADERSHIP & SERVICE

CIT Graduate Student Association, Purdue University, <i>Research & Engagement Officer</i>	2023 – 2025
Special Session on Natural Language Uncertainty in the Era of LLMs (NAFIPS), <i>Organizer</i>	2024
European Interdisciplinary Cybersecurity Conference, <i>Program Committee Member</i>	2023
North American Fuzzy Information Processing Society (NAFIPS), <i>Organizer</i>	2021
CIT Student Council, Purdue University, <i>Graduate Student Advisor</i>	2019 – 2020
IEEE Student Branch (Delhi Technological University, India), <i>Head, Public Relations</i>	2015 – 2016
IEEE Women in Engineering (Delhi Technological University, India), <i>Secretary</i>	2015 – 2016

REFERENCES

*Available upon request