SARANYA VENKATRAMAN

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EDUCATION

The Pennsylvania State University, University Park, PA, USA　　　*Aug 2018 - Present*
PhD Student - PIKE Lab
College of Information Science and Technology (IST)

New York University, New York City, NY, USA　　　*Jan 2020 - Present*
Visiting Scholar - ML^2Lab
Courant Institute of Mathematical Sciences (CIMS)

GB Pant Engineering College, New Delhi, India　　　*Aug 2012 - July 2016*
BTech in Computer Science & Engineering

INTERESTS

Natural Language Generation (NLG), Machine Learning (ML), DeepFake Text Detection, Authorship Attribution, Reinforcement Learning (RL), Computational Cognitive Modeling

RESEARCH INTERNSHIPS

Google LLC, New York, NY　　　May-Aug 2020
Research Intern - Google Assistant

· Built a stateful Soft Actor Critic (RL) based recommender dialog agent that interprets user preferences and suggests items from a marketplace using TF-Agents.
· Conducted ablation studies with agent actions, observations and data simulation techniques to populate a continuous space marketplace using Google Vizier for hyperparameter tuning.

Samsung Research America (SRA), Mountain View, CA　　　May-Aug 2018
Intern - Artificial Intelligence Center

· Developed a rule-based components extraction algorithm based on nested parsing of constituency-based syntax trees derived from natural language utterances.
· Implemented a semantic search based intent-to-action mapper using an ensemble of a short sentence similarity service and Glove word embeddings. Deployed as a web service (REST API) and integrated end-to-end with mobile devices using Bixby Capsule SDK.

Cadence Design Systems, Inc., San Jose, CA　　　May-Aug 2017
Machine Learning Intern - Machine Learning Team (now MAGESTIC), R&D Center

· Set up feature extraction and machine-learning pipelines for Cadence's proprietary layout images.
· Developed a proof of concept for hierarchical clustering & assisted-predictive labeling on custom-built dataset.
· Achieved an accuracy of 75% for 4 levels of abstraction on using ensemble of wavelet transformations with density based clustering approaches.

PUBLICATIONS

Saranya Venkatraman, Nafis Irtiza Tripto,and Dongwon Lee."CollabStory: Multi-LLM Collaborative Story Generation and Authorship Analysis" arXiv pre-print 2024.

Saranya Venkatraman, Adaku Uchendu, and Dongwon Lee."GPT-who: An Information Density-based Machine-Generated Text Detector." NAACL Findings 2024.

Nafis Irtiza Tripto, **Saranya Venkatraman**, Dominik Macko, Robert Moro, Ivan Srba, Adaku Uchendu, Thai Le, and Dongwon Lee. "A Ship of Theseus: Curious Cases of Paraphrasing in LLM-Generated Texts." ACL 2024.

Eric Xing, **Saranya Venkatraman**, Thai Le, and Dongwon Lee."ALISON: Fast and Effective Stylometric Authorship Obfuscation." AAAI 2024.

Tricia J. Ngoon, Sushil S, Angela E.B. Stewart, Ung-Sang Lee, **Saranya Venkatraman**, Neil Thawani, Prasenjit Mitra, Sherice Clarke, John Zimmerman, and Amy Ogan. "ClassInSight: Designing Conversation Support Tools to Visualize Classroom Discussion for Personalized Teacher Professional Development." CHI 2024.

Pranav Venkit, Mukund Srinath, Sanjana Gautam, **Saranya Venkatraman**, Vipul Gupta, Rebecca J. Passonneau, and Shomir Wilson. "The Sentiment Problem: A Critical Survey towards Deconstructing Sentiment Analysis." EMNLP 2023.

Saranya Venkatraman, He He, and David Reitter. "How do decoding algorithms distribute information in dialogue responses?" EACL Findings 2023.

Saranya Venkatraman, Prasenjit Mitra, Sherice N. Clarke, Andrea Gomoll, Zaynab Gates, Sushil S., Tarang Tripathi, and Amy Ogan. "ClassInSight: Automating Analysis of Classroom Discussions to Support Teacher Noticing and Reflection on Dialogic Pedagogy." EARLI 2021.

Greeshma Sharma, **Saranya Venkatraman**, and Virender Singh. "Ambiguity in Semantic Integration: A decomposition analysis by ERP." International Journal of Engineering Sciences & Technology 2277-9655 (2016).

Greeshma Sharma, **Saranya Venkatraman**, et al. "Artificial Neural Network in Virtual Reality: A Survey." International Journal of Virtual Reality. 15 (02): 44-52 (2015).

TUTORIALS

Adaku Uchendu, **Saranya Venkatraman**, Thai Le, Dongwon Lee."Catch Me If You GPT: Tutorial on Deepfake Texts." NAACL 2024.

Adaku Uchendu, Vladislav Mikhailov, Jooyoung Lee, **Saranya Venkatraman** et al. "Tutorial on Artificial Text Detection." INLG 2022.

TECHNICAL SKILLS

Computer Languages	Python, JavaScript, C/C++, MATLAB, R
Packages & Tools	PyTorch, Transformers, Tensorflow, TF-Agents, Keras, Flask, SciPy, Scikit-learn, Pandas, NumPy, Firebase

SERVICE & RECOGNITION

Graduate Student **Award for Excellence in Teaching Support**	2023-2024
Tutor & Mentor for NSF Research Experiences for Undergraduates (REU)	2023-2024
Secretary for Graduates in IST (GIST), Graduate Student Organization	2020-2021