# 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$^2$*Lab*
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, DeepFake Text Detection, Authorship Attribution, Computational Cognitive Modeling of Language, Machine Learning (ML), Reinforcement Learning (RL)

## 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**, 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

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|---|---|
| **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

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|---|---|
| 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 |