

Curriculum Vitae

# Anindya Sarkar

Ph.D. Student @ Washington University

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## Current Position

Ph.D. Student at Washington University (WashU) (Sept'21 - present)

## Research Interests

- **Broad Areas:** Artificial Intelligence (AI) for Decision Making.
- **Specific Interests:** Reinforcement Learning (RL) ; Deep Generative Modeling.

## Educational Background

Program	University	Marks Obtained	Year of Graduation
Ph.D. in Computer Science	Washington University in St. Louis	NA	2026 (Expected)
M.S in Computer Science	Washington University in St. Louis	3.74/4.0	2024 (Expected)
M.Tech in Bio-Medical	Indian Institute of Technology Hyderabad	8.58/10	2016
B.Tech in Electronics	West Bengal University of Technology	7.82/10	2012

## Work Experience

- **Washington University (Graduate Research Assistant , December 2021 - Now)**
  - Worked on Physically-Realistic “Adversarial AI” and “AI for Social Good” Projects.
- **Indian Institute of Technology Hyderabad (Research Assistant , April 2020 - August 2021)**
  - **Teaching Assistant** for a course on **Deep Learning for Computer Vision** offered on NPTEL (National Programme on Technology Enhanced Learning) Platform. [[Course Link](#)]
- **Quest Global (R&D Engineer , August 2016 - April 2020)** [[Company Website](#)]
  - Extensively worked on a broad range of Deep Learning applications in Computer Vision and Natural Language Processing tasks.
- **Indian Institute of Technology Hyderabad (August 2014 - August 2016)** [[Institute Website](#)]
  - **Teaching Assistant** for a course on **Computational Neuroscience**.

## Conference Publications

- C13.** [A. Sarkar](#), S. Sastry, A. Pirinen, C. Zhang, N. Jacobs, Y. Vorobeychik "GOMAA-Geo: GOal Modality Agnostic Active Geo-localization", 38th Conference on Neural Information Processing Systems (NeurIPS 2024). [[pdf](#)]
- C12.** [A. Sarkar](#), M. Lanier, S. Alfeld, J. Feng, R. Garnett, N. Jacobs, Y. Vorobeychik, " A Visual Active Search Framework for Geospatial Exploration", IEEE/CVF Winter Conference on Applications of Computer Vision (WACV 2024). [[pdf](#)]
- C11.** [A. Sarkar](#), A. Dichristifano, S. Das, P. Fowler, N. Jacobs, Y. Vorobeychik, " Geospatial Active Search for Preventing Eviction", The 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAAMAS 2024). [[pdf](#)]
- C10.** [A. Sarkar](#), N. Jacobs, Y. Vorobeychik, " A partially-Supervised Reinforcement Learning Framework for Visual Active Search", 37th Conference on Neural Information Processing Systems (NeurIPS 2023). [[pdf](#)]

- C9. [A. Sarkar](#), J. Feng, Y. Vorobeychik, C. Gill, N. Zhang, " [Reward Delay Attacks on Deep Reinforcement Learning](#) ", Conference on Decision and Game Theory for Security (**GAMESEC 2022**). [[pdf](#)]
- C8. J. Feng, Y. Chen, F. Li, [A. Sarkar](#), M. Zhang, " [How Powerful are K-hop Message Passing Graph Neural Networks](#)", 36th Conference on Neural Information Processing Systems (**NeurIPS 2022**). [[pdf](#)]
- C7. A. Sarkar, D. Vijaykeerthy, [A. Sarkar](#), V. Balasubramanian, " [A Framework for Learning Ante-hoc Explainable Models via Concepts](#)", IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2022**). [[pdf](#)]
- C6. [A. Sarkar](#), A. Sarkar, V. Balasubramanian, " [Leveraging Test-Time Consensus Prediction for Robustness against Unseen Noise](#)", IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV 2022**). [[pdf](#)]
- C5. [A. Sarkar](#), A. Sarkar, S. Gali, V. Balasubramanian, " [Get Fooled for the Right Reason: Improving Adversarial Robustness through a Teacher-guided Curriculum Learning Approach](#) ", 35th Conference on Neural Information Processing Systems (**NeurIPS 2021**). [[pdf](#)][[blog](#)]
- C4. [A. Sarkar](#), A. Sarkar, V. Balasubramanian, " [Enhanced Regularizers for Attributional Robustness](#)", 35th Association for the Advancement of Artificial Intelligence (**AAAI 2021**). [[pdf](#)]
- C3. [A. Sarkar](#), R. Iyengar, " [Enforcing Linearity in DNN succours Robustness and Adversarial Image Generation](#)", 29th International Conference on Artificial Neural Networks (**ICANN 2020**). [[pdf](#)]
- C2. [A. Sarkar](#), A. Raj, R. Iyengar, " [ODE guided Neural Data Augmentation Techniques for Time Series Data and its Benefits on Robustness](#)", 19th IEEE International Conference on Machine Learning and Applications (**ICMLA 2020**). [[pdf](#)]
- C1. [A. Sarkar](#), S. Reddy, R. Iyengar, " [Zero Shot Multilingual Sentiment Analysis using Hierarchical Attentive Network and BERT](#)", 3rd International Conference on Natural Language Processing and Information Retrieval (**NLPIR 2019**). [[pdf](#)]

## Workshop Publications

- W3. Y. Xu, M. Lanier, [A. Sarkar](#), Y. Vorobeychik, " [Attacks on Node Attributes in Graph Neural Networks](#) ", Association for the Advancement of Artificial Intelligence (**AAAI 2024**) Workshop on " Artificial Intelligence for Cyber Security ".
- W2. S. Gali, [A. Sarkar](#), V. Balasubramanian, " [Empowering a Robust Model with Stable and Object-Aligned Explanations](#)", European Conference on Computer Vision (**ECCV 2022**) Workshop on " Adversarial Robustness In The Real World ". [[pdf](#)]
- W1. [A. Sarkar](#), A. Sarkar, V. Balasubramanian, " [Leveraging Test-Time Consensus Prediction for Robustness against Unseen Noise](#)", International Conference on Computer Vision (**ICCV 2021**) Workshop on " Adversarial Robustness In The Real World ". [[pdf](#)]

## Preprints/ArXiv

- A2. Q. Nyugen, [A. Sarkar](#), R. Garnett, " [Amortized Nonmyopic Active Search via Deep Imitation Learning](#)". [[pdf](#)]
- A1. A. Sarkar, D. Vijaykeerthy, [A. Sarkar](#), V. Balasubramanian, " [Inducing Semantic Grouping of Latent Concepts for Explanations: An Ante-Hoc Approach](#)". [[pdf](#)]

## Other Research Projects

- R. Iyengar, M. Pithapuram, A. Singh, M. Raghavan, "Curated model development using NEUROiD: A web-based NEUROmotor integration and Design platform", ( **Frontiers in Neuroinformatics 2019**) [[pdf](#)]
  - **Acknowledged by the authors** of "Curated model development using NEUROiD: A web-based NEUROmotor integration and Design platform", for the initial literature study and laying the foundations on which NEUROiD is build.

## Technical Skills

- **Programming Languages:** Python, Java, C++, C, R, Matlab.
- **Machine Learning/Deep Learning Frameworks:** PyTorch, Tensorflow, Keras.

## Research Talks / Presentations

- Presented our work: "Geospatial Active Search for Preventing Eviction" at **AAMAS'24** held in Auckland, NZ.
- Presented our work: "A Visual Active Search Framework for Geospatial Exploration" at **WACV'24** held in Hawaii, USA.
- Presented our work: "A Partially Supervised Reinforcement Learning Framework for Visual Active Search" at **NeurIPS'23** held in New Orleans, USA.
- Presented our work: "Reward Delay Attacks on Deep Reinforcement Learning" at **GAMESEC'22** held in Carnegie Mellon University, USA.

## Major Graduate Level Courses Taken

- Deep Reinforcement Learning ( Offered By Prof. Chongjie Zhang )
- Bayesian Methods in Machine Learning ( Offered By Prof. Roman Garnett )
- Adversarial AI ( Offered By Prof. Yevgeniy Vorobeychik )
- Algorithms for Nonlinear Optimization ( Offered By Prof. Yixin Chen )

## Teaching Experience

- Co-taught "Adversarial AI" course with Prof. Yevgeniy Vorobeychik.

## Services

- Program Committee Member of **AAAI 2025 (AI for Social Good Track)**.
- Program Committee Member of **AAMAS 2025**.
- Former Member of **European Neural Network Society (ENNS)**.
- Former Member of **ACM India Student Chapter**.
- Reviewer at **ICLR 2025, AAAI 2025, AAMAS 2025 AISTATS 2025, NeurIPS 2024, AAAMAS 2024, IJCAI 2024, ICCV 2023, ICML 2022, ECCV 2022, CVPR 2022, ICANN 2020**.
- Sub-Reviewer at **CVPR 2022, CVPR 2021, NeurIPS 2021, ICLR 2021, ICML 2021, TNNLS 2020, and ICMLA 2019**.

## Awards and Certificates

- Awarded **AAMAS-24 Student Scholarship** to attend the conference and doctoral consortium.
- Awarded **Honors** (selected as top 15% PhD student) by the Department of Computer Science at WashU.
- Awarded **Fully Funded Scholarship** to pursue Ph.D. research.
- Qualified in West Bengal **Joint Entrance Examination** with 99 percentile.
- Qualified in **All India GATE** (Electronics and Communication paper) in 2014 with score 666 (99.1 percentile).
- Awarded **Ministry of Human Resource Development (MHRD)** scholarship to pursue Masters Study.
- Successfully Completed **Deep Reinforcement Learning Nanodegree Program** by **Udacity** co-created with Nvidia. [[Certificate](#)])

## References

- **Dr. Yevgeniy Vorobeychik:** Professor, Washington University in St. Louis [[Lab Link](#)]
- **Dr. Nathan Jacobs:** Professor, Washington University in St. Louis [[Lab Link](#)]
- **Dr. Vineeth N Balasubramanian:** Professor, Indian Institute of Technology Hyderabad [[Lab Link](#)]