Aditya T. Vadlamani

vadlamani.12@osu.edu | linkedin.com/in/adityatv | adityavadlamani.github.io

Research Interests

Graph Machine Learning, Conformal Prediction, High-Performance Computing, Recommender Systems, Generative AI

Education

The Ohio State University — Columbus, OH

PhD in Computer Science and Engineering — *Aug. 2023 – Present*

- **Advisor:** Dr. Srinivasan Parthasarathy
- **Research Focus:** Conformal Prediction, Graph Machine Learning
- **Thesis:** *Conformal Methods for Reliable Satisfaction of External Constraints*

M.S. in Computer Science and Engineering — *Jan. 2022 – May 2023*

- **Advisor:** Dr. Srinivasan Parthasarathy
- **Project:** *An Open-Source Implementation of MultiBiSage and Renewed Bearing*

B.S. in Computer Science and Engineering, Mathematics, Magna Cum Laude — *Aug. 2018 – May 2022*

Research Experience

Graduate Student Researcher — Aug. 2022 – Present

The Ohio State University — *Columbus, OH*

- Developed a generic framework for algorithmically fair conformal prediction and extended it to federated learning settings, resulting in publications at ICLR 2025 and NeurIPS 2026.
- Benchmarked and analyzed conformal prediction methods for transductive node classification, identifying practical considerations for uncertainty quantification in GNNs, resulting in a publication at TMLR 2025.
- Developed scalable training methods for heterogeneous GNNs using sampling and ensembling techniques, resulting in a publication at ICDM 2025.
- Proposed a framework for auditing AI systems in real-world deployments, resulting in a publication at KDD 2026 (Blue Sky Ideas Track).
- Developed a transfer-calibrated approach to prediction-powered inference, currently under review.
- Extending conformal prediction to generative models, including steering diffusion models and providing formal safety guarantees for LLMs for auditing.
- Administered multi-GPU high-performance computing infrastructure supporting large-scale machine learning and data-intensive research workloads.

Publications & Preprints

Vadlamani, A. T., Chang, J. H., Parthasarathy, S., Paul, S. "Transfer Calibrated Prediction Powered Inference." Under Review.

Srinivasan, A.*, **Vadlamani, A. T.***, Meghrazi, A., Parthasarathy, S. "FedCF: Fair Federated Conformal Prediction.". *The Fortieth Annual Conference on Neural Information Processing Systems (NeurIPS)*, December 2026. *To Appear. Acceptance Rate: 25.7%.*

Vadlamani, A. T., Srinivasan, A., Parthasarathy, S., "Towards Auditing AI Systems in the Wild". *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, August 2026. *Blue Sky Ideas Track. Acceptance Rate: 23.61%.*

Collins, M., **Vadlamani, A.**, Gandhi, M., Sense, F., Swan, G., Kursmark, M., Parthasarathy, S., Jastrzembski Myers, T., "Beyond Static Models: Developing Robust Adaptive Intelligent Systems through Model Dynamism". *28th International Conference on Human-Computer Interaction (HCII)*, July 2026. *Adaptive Instructional Systems (AIS).*

Vadlamani, A. T., Salarian, S., Gurukar, S, Parthasarathy, S. "BLB-HGNN: Bag of Little Bootstraps for Training Heterogeneous GNNs." *IEEE International Conference on Data Mining (ICDM)*, November 2025. *Acceptance Rate: 22.42%.*

Maneriker, P.*, **Vadlamani, A. T.***, Srinivasan, A., He, Y., Payani, A., Parthasarathy, S. "Conformal Prediction: A Theoretical Note and Benchmarking Transductive Node Classification in Graphs." *Transactions on Machine Learning Research (TMLR)*, May 2025.

Vadlamani, A. T.*, Srinivasan, A.*, Maneriker, P., Payani, A., Parthasarathy, S. "A Generic Framework for Conformal Fairness." *The Thirteenth International Conference on Learning Representations (ICLR)*, April 2025. *Acceptance Rate: 31.75%. Also accepted for the Responsible AI Day at KDD 2025.*

Dias, V., Ferraz, S., **Vadlamani, A. T.**, Erfanian, M., Teixeira, C. H. C., Guedes, D., Meira Jr, W., Parthasarathy, S. "Graph Pattern Mining Paradigms: Consolidation and Renewed Bearing." *IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC)*, December 2023. *Presenting Author.* ***Best Paper Nominee.***

Vadlamani, A. T., Rumreich, L., Phillips, A. "GIFTS: Exploration Activities for Just-in-Time Learning in a First-Year Engineering Robotics Design-Build Project." *Proceedings from the American Society for Engineering Education (ASEE) Annual Conference*, June 2023.

**Denotes shared first authorship*

Teaching Experience

Graduate Teaching Associate Jan. 2022 – May 2023; Aug. 2024 – Present
The Ohio State University *Columbus, OH*

- Taught the laboratory and (robot) project components for the honors first-year engineering sequence.
- Developed and maintained a full-stack web application (Vue.js, Express.js) hosted on AWS via Terraform, scaling it from one course to every course of the first-year engineering program, now serving over 2,000 students and 100 instructional staff.
- Led software development efforts, including communication software for Arduino, Raspberry Pi, and custom PCB components for automated scoring and aesthetic LEDs.
- Fostered teamwork and developed the obstacle course for the first-year robot project with a multidisciplinary group.

Undergraduate Teaching Assistant Aug. 2019 – Dec. 2021
The Ohio State University *Columbus, OH*

- Aided student learning of problem-solving and technical skills, including Microsoft Excel, MATLAB, and C/C++.
- Maintained software that the students used and interacted with for game and robot development.

Honors & Awards

Recipient of the University Fellowship from the Graduate School of The Ohio State University (2023 – 2024)
Best Paper Nominee at HiPC 2023 (top 6 out of 36 regular papers), December 2023

Service

Reviewer: ICML (2025, 2026), ICLR (2026), and other conferences and journals

Industry Experience

Machine Learning Engineer Intern May 2026 – Aug. 2026
Pinterest *Remote*

- Introduced a new architecture and training objectives of OmniSage, Pinterest's in-house representation learning framework, to better leverage user engagement signals
- Improved key offline evaluation metrics by up to 5% through the new architecture and objectives

Software Engineer Intern May 2025 – Aug. 2025
Google *Sunnyvale, CA*

- Designed and implemented a TF-GNN-based graph neural network to rank code tests most likely to fail when machine learning libraries are modified across Google's codebase
- Built a large-scale data pipeline using an internal Flume-based framework to construct code-test dependency graphs from Google's codebase for model training

Software Engineer Intern May 2023 – Aug. 2023
Cruise LLC *Sunnyvale, CA*

- Designed and implemented a prototype encoder model to detect invalid autonomous vehicle simulation scenarios
- Reduced manual review and accelerated software releases by filtering low-quality simulation outputs

Software Development Engineer Intern May 2022 – Aug. 2022
Amazon Web Services *Cupertino, CA*

- Prototyped a scalable AWS environment for functional network verification of routing policies.
- Implemented syntactic validation for routing policy attributes, preventing numeric and regular-expression errors that could otherwise trigger unnecessary router redeployments.

Software Development Engineer Intern May 2021 – Aug. 2021
Amazon.com *Remote*

- Deployed a serverless full-stack web application used by engineers to collect ground-truth data for search services.

Technology Intern May 2019 – Aug. 2019
CAS *Columbus, OH*

- Developed the front end for a full-stack account recovery application, enhancing customer experience and reducing customer support call times by up to 15 minutes.

Technical Skills

Programming Languages: Python, C/C++, Java, SQL, MATLAB, JavaScript
Machine Learning & Deep Learning: PyTorch, TensorFlow, HuggingFace Transformers, NumPy, Pandas
Graph Machine Learning: PyTorch Geometric, DGL, TF-GNN, NetworkX
MLOps & Experiment Tracking: Docker, Weights & Biases, MLflow
Distributed Systems & HPC: Ray, SLURM, CUDA, Apache Spark, Apache Flume
Cloud Platforms & DevOps: AWS, Google Cloud Platform, Terraform, Git