

ANIKET ANIL WAGDE

PhD Candidate, Computer Science, University of Illinois Chicago · Advised by Prof. Aadirupa Saha · Expected 2027

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SUMMARY

PhD candidate at UIC, advised by Prof. Aadirupa Saha. Recent work on **LLM-as-a-Judge with Adobe Research** (collaboration with Dr. Branislav Kveton) accepted at **AISTATS 2026**; companion work on sample-efficient combinatorial bandit algorithms accepted at **NeurIPS 2025 OPT Workshop**. Research at the intersection of **LLM evaluation, multi-armed bandits, and online learning**. Prior industry experience as ML/DL engineer at Dell Technologies and several startups, building production NLP and computer-vision systems.

Research interests: LLM Evaluation & Adaptive Sampling, Multi-Armed Bandits & Online Learning, Reinforcement Learning Theory, Convex Optimization for Neural Networks, Multi-Agent Learning.

EDUCATION

University of Illinois Chicago — Ph.D. in Computer Science **2022 – 2027 (expected)**
GPA: **3.87 / 4.0** · Advisor: **Prof. Aadirupa Saha** · Transferred from MS to PhD track based on research progress.

Manipal University Jaipur — B.Tech. in Computer Science & Engineering **2015 – 2019**
CGPA: **8.00 / 10**

PUBLICATIONS

- Saha, A., **Wagde, A.**, Kveton, B. [LLM-as-Judge on a Budget](#). **AISTATS 2026**. [[arXiv:2602.15481](#)] [[Code](#)] Formulates LLM-as-a-judge evaluation as a variance-adaptive resource allocation problem; uses multi-armed bandits to minimize estimation error under a fixed budget.
- **Wagde, A.**, Saha, A. [Efficient Algorithms for Combinatorial-Bandits with Monotonicity](#). **NeurIPS 2025 OPT Workshop**. [[OpenReview](#)] Reduces combinatorial bandits to bandits with pairwise preferences; matches state-of-the-art sample complexity while removing restrictive assumptions on the aggregation operator.
- Rani, G., Pandey, U., **Wagde, A.A.**, et al. [A Deep Reinforcement Learning Technique for Bug Detection in Video Games](#). **International Journal of Information Technology**, 15, 355–367, 2023. [[DOI](#)]

RESEARCH EXPERIENCE

LLM-as-Judge on a Budget · *Adobe Research × UIC (with Dr. Branislav Kveton)* **2025 – Present**

- Formulated LLM-as-a-judge evaluation as a variance-adaptive resource allocation problem; designed adaptive sampling strategies that match Oracle expected performance with no prior knowledge of evaluator variance.
- Co-authored with Prof. Aadirupa Saha (UIC) and Dr. Branislav Kveton (Adobe Research); accepted at **AISTATS 2026**.

Combinatorial Bandits with Monotonic Aggregation · *University of Illinois Chicago* **Feb 2024 – Present**

- Designed a reduction from combinatorial bandits to bandits with pairwise preferences using randomization and selective sampling, identifying optimal arm subsets without knowing the underlying aggregation operator.
- Matched state-of-the-art sample complexity while eliminating restrictive monotonicity assumptions made by prior work; published at **NeurIPS 2025 OPT Workshop**. Ongoing extension targeted at top ML venues.

Value Smoothing via Latent Embedding Similarity · *University of Illinois Chicago* **2022**

- Modified the RL reward structure with embedding-space similarity to densify learning signal in sparse-reward environments; experimentally outperformed standard baselines on benchmark tasks (PyTorch).

Metareasoning for Monte Carlo Tree Search · *University of Illinois Chicago* **2022**

- Studied decision-theoretic frameworks for allocating compute at planning time in MCTS, exploring how agents should select among computational actions to plan effectively under bounded budgets.

Deep RL for Bug Detection in Video Games · *Manipal University Jaipur* **Jun 2018 – Feb 2022**

- Trained a DQN agent to play a target game; identified injected bugs by monitoring DQN gradient spikes and Q-value uncertainty, proposing RL-based automated game-state testing.
- Published in the **International Journal of Information Technology** (Springer).

INDUSTRY EXPERIENCE

Data Science Intern · Dell Technologies, Austin, TX

Summers 2022 & 2023

- 2023 — *LLM Summarization*: Built an LLM-based summarization pipeline (ChatGPT API) for support escalations so senior staff review concise summaries instead of full ticket histories, reducing handle time. Ran prompt-engineering experiments to stabilize summary quality across diverse ticket types and product lines.
- 2022 — *Semantic Search*: Designed and shipped an embedding-based semantic search system on dell.com support, replacing classic keyword/IR with Universal Sentence Encoder embeddings (TensorFlow). Deployed to production for both the virtual support agent and the knowledge-base search interface.

Earlier Industry Experience · Bangalore / Mumbai / Chennai, India

2017 – 2021

- ML/DL roles at **Sensight Labs** (intelligent shopping cart, computer-vision product identification, AWS-distributed scraping), **IceCream Labs** (zero-shot brand recognition at 97% accuracy on 250 brands; visual search, nutrition-table OCR), **Spinnaker Analytics** (return-prediction model, time-series forecasting), and **CSS Corp / Movate** (Python automation tooling).

AWARDS

- **NeurIPS 2025 Conference Travel Grant** — competitive travel grant awarded to attend NeurIPS 2025 in San Diego, CA (Dec 2025).
- **MS → PhD Track Transfer** — transferred to the PhD program at UIC based on research progress.
- **Microsoft Imagine Cup** — Team placed in the **top 8 nationally**; one of two hackathons participated in during undergrad.
- **IISc-IBM Pravega Hackathon** — Awarded **2nd place**.

TALKS & PRESENTATIONS

- *LLM-as-Judge on a Budget* — to be presented at **AISTATS 2026**. (Morocco, 2026)
- *Efficient Algorithms for Combinatorial-Bandits with Monotonicity* — **NeurIPS 2025 OPTML Workshop**, San Diego, CA, Dec 2025. (Poster Presentation)

ACADEMIC SERVICE

- **Reviewer**, International Conference on Machine Learning (**ICML**) 2026.

TEACHING EXPERIENCE

- **Teaching Assistant**, *CS 411: Artificial Intelligence I* — University of Illinois Chicago. (Fall 2022, Spring and Fall 2023)
- **Teaching Assistant**, *CS 401: Computer Algorithms I* — University of Illinois Chicago. (Spring 2026)
- **Teaching Assistant**, *CS 361: Systems Programming* — University of Illinois Chicago. (Spring and Fall 2025)
- **Teaching Assistant**, *CS 211: Programming Practicum* — University of Illinois Chicago. (Fall 2024)
- **Teaching Assistant**, *CS 151: Mathematical Foundations of Computing* — University of Illinois Chicago. (Spring and Summer 2024)

SELECTED OPEN-SOURCE PROJECTS

- **Value Smoothing for Reinforcement Learning** (PyTorch) — reward-shaping via embedding similarity for sparse-reward environments. github.com/srthiru/rl_project
- **Visual Image Text-Based Search Engine** (Python, NLP) — built a probabilistic image-to-text product mapping system to identify items placed in a shopping cart from camera captures.
- **Lathe Machine Damage Analysis** (Python, statsmodels) — connected vibration sensors to lathe machines and applied time-series forecasting (Holt-Winters) to predict drill-bit wear from vibration amplitude.
- Additional projects (CV, NLP, RL, time-series) at github.com/Swagget and aniketwagde.com/projects.

TECHNICAL SKILLS

Languages & Tools: Python, PyTorch, TensorFlow, NumPy, scikit-learn, OpenCV, Pandas, Git, AWS, LaTeX, HuggingFace Transformers, OpenAI / Anthropic APIs, prompt engineering.

Research Areas: Multi-Armed Bandits, Online Learning, Reinforcement Learning, Convex Optimization, Theoretical Machine Learning, LLM Evaluation, Deep Learning, NLP, Computer Vision.