Ruchit Rawal

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EDUCATION

University of Maryland, College Park
Ph.D. in Computer Science (Dean's Fellowship)   *Aug'24 – Present*
Advisor: Prof. Tom Goldstein
CGPA : 4.00/4.00
Current Research: (a) Inference-time scaling for text-to-image/video generative models; (b) Mode collapse and diversity improvement in posttrained text-to-image/video models; (c) Evaluating LLMs' ability for multi-turn code generation.

Netaji Subhas Institute of Technology, University of Delhi
B.E. in Electronics and Communication Engineering   *Aug'17 – May'21*
CGPA : 8.07/10 (80.7%)

SELECTED RESEARCH WORK

Full list available at Google Scholar

1. **ARGUS: Hallucination and Omission Evaluation in Video-LLMs**   *ICCV 2025*
   R. Rawal, R. Shirkavand, H. Huang, G. Somepalli, T. Goldstein
   [Paper] [Code] [Dataset]

2. **Hints Help Finding and Fixing Bugs Differently in Python and Text-based Program Representations**   *ICSE 2025*
   R. Rawal, V.-A. Pădurean, S. Apel, A. Singla, M. Toneva
   [Paper] [Code]

3. **CinePile: A Long Video Question Answering Dataset and Benchmark**   *CVPR-W 2024*
   R. Rawal, K. Saifullah, R. Basri, D. Jacobs, G. Somepalli, T. Goldstein   **[Best Paper]**
   [Paper] [Code] [Dataset]

4. **Perturbed examples reveal invariances shared by language models**   *ACL Findings 2024*
   R. Rawal, M. Toneva
   [Paper] [Code]

5. **What Happens During Finetuning of Vision Transformers: An Invariance Based Investigation**   *CoLLAs 2023*
   G. Merlin, V. Nanda, R. Rawal, M. Toneva
   [Paper]

6. **DE-CROP: Data-efficient Certified Robustness for Pretrained Classifiers**   *WACV 2023*
   G. K. Nayak*, R. Rawal*, A. Chakraborty
   [Paper] [Code]

7. **DAD: Data-free Adversarial Defense at Test Time**   *WACV 2022*
   G. K. Nayak*, R. Rawal*, A. Chakraborty
   [Paper] [Code]

8. **MMD-ReID: A Simple but Effective solution for Visible-Thermal Person ReID** *BMVC 2021*
   C. Jambigi*, R. Rawal*, A. Chakraborty   **[Oral]**
   [Paper] [Code]

9. **Climate Adaptation: Reliably Predicting from Imbalanced Satellite Data**   *CVPR-W 2020*
   R. Rawal*, P. Pradhan*   **[Oral]**
   [Paper] [Code]

10. **Generalizing across the (in)visible spectrum** *ICML-W 2020*
    R. Rawal*, P. Pradhan* [Oral]
    [Paper] [Code]

* denotes equal contribution

Research Experience

1. **Research Intern**, Max Planck Institute for Software Systems *Sep'22 – Feb'24*
   Advisors: Prof. Mariya Toneva, Prof. Adish Singla *Saarbrücken, Germany*
   - Designed frameworks (and measures) for better understanding of vision and language models by systematically comparing their shared invariances.
   - Developed LLM-driven feedback systems to improve understanding of buggy programs, focusing on identifying human preferences through behavioral and neural analysis.

2. **(Research) Project Assistant**, VCL, Indian Institute of Science *March'21 – July'22*
   Advisor: Prof. Anirban Chakraborty *Bangalore, India (Remote)*
   - Led and contributed to multiple research projects centered around data-efficient adversarial robustness.
   - Presented results at WACV-23, WACV-22, CVPR-W 2022, and BMVC 2021.

Awards and Cocurriculars

1. Recipient – Dean's Fellowship for outstanding academic achievement. (2024 – 2026; UMD)

2. Recipient – Fatima Al-Fihri Pre-Doctoral Fellowship (2022; Acceptance Rate $\approx 7\%$)

3. Selected to attend the Summer School on Computer Vision 2019 at IIIT Hyderabad. One among the **Top-20** participants from a pool of over 250 PhD, graduates and undergraduates. Reward entails a potential travel grant to CVPR 2020 and ICCV 2020 apart from a cash prize.

4. As the Director of Debating at The Debating Society of NSIT (June 2019 - March 2020), I spearheaded a team of 30+ college debaters, organizing training sessions, and engaging participation in 15+ prestigious pan-India debate tournaments.