

Ruchit Rawal

✉ email — 🏠 website — in linkedin — 🐙 github

EDUCATION

University of Maryland, College Park

Ph.D. in Computer Science (Dean's Fellowship)

Starting Aug'24

Advisor: [Tom Goldstein](#)

CGPA : 4.00/4.00

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%)

WORK EXPERIENCE

- 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.
 - Developing LLM-driven feedback systems to enhance understanding of buggy programs, with a focus on first identifying human preferences via behavioral and neural analysis.
- (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 the resulting works at WACV-23, WACV-22, CVPRW-22, and BMVC-21 conferences.

RESEARCH WORK

PREPRINTS

- CinePile: A Long Video Question Answering Dataset and Benchmark**
[Ruchit Rawal](#), Khalid Saifullah, Ronen Basri, David Jacobs, Gowthami Somepalli, Tom Goldstein
Preprint, 2024 [[Paper](#)][[Code](#)][[Dataset](#)]

JOURNALS AND CONFERENCE PROCEEDINGS

- Perturbed examples reveal invariances shared by language models**
[Ruchit Rawal](#), Mariya Toneva
Findings of the Association for Computational Linguistics (ACL), 2024 [[Paper](#)][[Code](#)]
- Robust Few-shot Learning Without Using any Adversarial Samples**
Gaurav Kumar Nayak, [Ruchit Rawal](#), Inder Khatri, Anirban Chakraborty
IEEE Transactions on Neural Networks and Learning Systems (In Press), 2023 [[Paper](#)][[Code](#)]
- What Happens During Finetuning of Vision Transformers: An Invariance Based Investigation**
Gabriele Merlin, Vedant Nanda, [Ruchit Rawal](#), Mariya Toneva
Conference on Lifelong Learning Agents (CoLLAs), 2023 [[Paper](#)]

5. **DE-CROP: Data-efficient Certified Robustness for Pretrained Classifiers**
Gaurav Kumar Nayak*, **Ruchit Rawal***, Anirban Chakraborty
Winter Conference on Applications of Computer Vision (WACV), 2023. [\[Paper\]](#)[\[Code\]](#)
6. **DAD : Data-free Adversarial Defense at Test Time**
Gaurav Kumar Nayak*, **Ruchit Rawal***, Anirban Chakraborty
Winter Conference on Applications of Computer Vision (WACV), 2022. [\[Paper\]](#)[\[Code\]](#)
7. **MMD-ReID: A Simple but Effective solution for Visible-Thermal Person ReID (Oral)**
Chaitra Jambigi*, **Ruchit Rawal***, Anirban Chakraborty
British Machine Vision Conference (BMVC), 2021. [\[Paper\]](#) [\[Code\]](#)

WORKSHOPS

8. **Data-free Defense of Black Box Models Against Adversarial Attacks**
Gaurav Kumar Nayak, Inder Khatri, **Ruchit Rawal**, Anirban Chakraborty
Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2024 [\[Paper\]](#)[\[Code\]](#)
9. **Dynamics of Dataset Bias and Robustness**
Prabhu Pradhan*, **Ruchit Rawal***,
ICML Workshop on Principles of Distribution Shift (PODS), 2022. [\[Paper\]](#)
10. **Holistic Approach To Measure Sample-Level Adversarial Vulnerability and Its Utility in Building Trustworthy Systems**
Gaurav Kumar Nayak*, **Ruchit Rawal***, Rohit Lal*, Himanshu Patil, Anirban Chakraborty
Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2022. [\[Paper\]](#) [\[Code\]](#)
11. **Rendezvous between Robustness and Dataset Bias: An empirical study**
Prabhu Pradhan*, **Ruchit Rawal***, Gopi Kishan
NeurIPS pre-registration Workshop, 2020. [\[Paper\]](#)
12. **Generalizing across the (in)visible spectrum (Oral)**
Ruchit Rawal*, Prabhu Pradhan*
ICML Workshop on Extreme Classification, 2020. [\[Paper\]](#) [\[Code\]](#)
13. **Climate Adaptation: Reliably Predicting from Imbalanced Satellite Data (Oral)**
Ruchit Rawal*, Prabhu Pradhan*
Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2020. [\[Paper\]](#) [\[Code\]](#)

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.