

# Prithvijit Chattopadhyay

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- RESEARCH AREAS** Out-of-Distribution Generalization, Robust Machine Learning, Embodied RL
- EDUCATION**
- School of Interactive Computing, Georgia Tech** 2019 - Present  
*Ph.D. in Computer Science*  
Advised by Prof. Judy Hoffman  
**Award:** [Rising Star Doctoral Student Research Award](#)
- College of Computing, Georgia Tech** 2017 - 2019  
*M.S. in Computer Science*  
Advised by Prof. Devi Parikh  
**Thesis:** [Evaluating Visual Conversational Agents via Cooperative Human-AI Games](#)  
**Award:** [M.S. Research Award](#)
- Delhi Technological University (Formerly DCE)** 2012 - 2016  
*B.Tech. in Electrical Engineering*
- AWARDS & RECOGNITION**
- Outstanding reviewer** for CVPR 2022  
**Highlighted reviewer** for ICLR 2022  
**Outstanding reviewer** for CVPR 2021  
**Outstanding reviewer** for MLRC 2021  
**Among top 33% reviewers** for ICML 2020  
**NVIDIA Best Runner Up Paper Award** at AROW, ECCV 2020  
**Recipient:** CS-7001 Research Award (2020) - Interactive Computing, Georgia Tech  
**Invited to mentor students at the “New in ML” workshop** at NeurIPS 2019  
**Recognized as one of the best reviewers** for NeurIPS 2019  
**Outstanding Reviewer** for ICLR 2019  
**Recipient:** IC Student Travel Grant to attend NeurIPS 2018  
**Among top 30% reviewers** for NeurIPS 2018  
**Recipient:** MS Research Award (2018) - College of Computing, Georgia Tech  
**Winner:** VT-Hacks, 2017, a Major League Hacking event.  
**Semi-Finalists:** ROBOSUB - AUVSI, 2013 out of 30 participating teams  
**Finalists:** NIOT SAVE, 2013 out of 27 participating teams  
**Recipient:** Merit Scholarships for Undergraduate Academic Performance (2012-2014)  
**Recipient:** KVPY and INSPIRE Fellowships, 2012  
**National Top 1%:** Indian National Physics Olympiad (InPhO), 2013
- PUBLICATIONS & PRE-PRINTS** (\*denotes equal contribution)
- PASTA: Proportional Amplitude Spectrum Augmentation for Synthetic to Real Domain Generalization**  
*arXiv 2022*  
[P. Chattopadhyay\\*](#), K. Sarangmath\*, V. Vijaykumar, J. Hoffman
- RobustNav: Towards Benchmarking Robustness in Embodied Navigation**  
*International Conference on Computer Vision (ICCV) 2021 (Oral)*  
*Embodied AI Workshop, CVPR 2021*  
[P. Chattopadhyay](#), J. Hoffman, R. Mottaghi, A. Kembhavi
- Likelihood Landscapes: A Unifying Principle Behind Many Adversarial Defenses**  
*Adversarial Robustness in the Real World (AROW), ECCV 2020 (Talk)*  
[NVIDIA Best Paper Runner Up](#)  
F. Lin, R. Mittapali, [P. Chattopadhyay](#), D. Bolya, J. Hoffman

**Learning to Balance Specificity and Invariance for In and Out of Domain Generalization**

*European Conference on Computer Vision (ECCV) 2020 (Poster)*  
*Visual Learning with Limited Labels (LwLL), CVPR 2020 (Poster)*  
**P. Chattopadhyay**, Y. Balaji, J. Hoffman

**IR-VIC: Unsupervised Discovery of Sub-goals for Transfer in RL**

*International Joint Conference on Artificial Intelligence (IJCAI) 2020 (Poster)*  
N. Modhe, **P. Chattopadhyay**, M. Sharma, A. Das, D. Parikh, D. Batra, R. Vedantam

**DS-VIC: Unsupervised Discovery of Decision States for Transfer in RL**

*Task-Agnostic Reinforcement Learning (TARL) Workshop, ICLR 2019 (Poster)*  
N. Modhe, **P. Chattopadhyay**, M. Sharma, A. Das, D. Parikh, D. Batra, R. Vedantam

**Improving Generative Visual Dialog by Answering Diverse Questions**

*Conference on Empirical Methods in Natural Language Processing (EMNLP) 2019 (Poster)*  
V. Murahari, **P. Chattopadhyay**, D. Batra, D. Parikh, A. Das

**EvalAI: Towards Better Evaluation Systems for AI Agents**

*arXiv 2019 (Technical Report)*  
*Workshop on AI Systems, SOSP 2019 (Poster)*  
D. Yadav, R. Jain, H. Agrawal, **P. Chattopadhyay**, T. Singh, A. Jain, S. Singh, S. Lee, D. Batra

**Choose Your Neuron: Incorporating Domain Knowledge Through Neuron-Importance**

*European Conference on Computer Vision (ECCV) 2018 (Poster)*  
*Continual Learning Workshop, NeurIPS 2018 (Poster)*  
*Visually Grounded Interaction and Language (ViGIL), NeurIPS 2018 (Poster)*  
R. Selvaraju\*, **P. Chattopadhyay\***, M. Elhoseiny, T. Sharma, D. Batra, D. Parikh, S. Lee

**Do Explanations make VQA models more predictable to a human?**

*Conference on Empirical Methods in Natural Language Processing (EMNLP) 2018 (Poster)*  
A. Chandrasekaran\*, V. Prabhu\*, D. Yadav\*, **P. Chattopadhyay\***, D. Parikh

**Evaluating Visual Conversational Agents via Cooperative Human-AI Games**

*AAAI Conference on Human Computation and Crowdsourcing (HCOMP) 2017 (Oral)*  
**P. Chattopadhyay\***, D. Yadav\*, V. Prabhu, A. Chandrasekaran, A. Das, S. Lee, D. Batra, D. Parikh

**It Takes Two to Tango: Towards Theory of AI's Mind**

*Challearn Looking at People Workshop, CVPR 2017 (Oral)*  
A. Chandrasekaran\*, D. Yadav\*, **P. Chattopadhyay\***, V. Prabhu\*, D. Parikh

**Counting Everyday Objects in Everyday Scenes**

*IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2017 (Spotlight)*  
**P. Chattopadhyay\***, R. Vedantam\*, R. Selvaraju, D. Batra, D. Parikh

**Delhi Technological University: Design and Development of the Littoral AUV Zyra 2.0**

*AUVSI RoboSub Journal 2014 (Technical Report)*

**EXPERIENCE**

**PRIOR, Allen Institute for AI**

May 2022 - Aug 2022

*Research Intern, mentored by Ani Kembhavi, Roozbeh Mottaghi and Judy Hoffman*  
Learning representations of environments from house tours to improve sample efficiency and generalization for embodied agents across tasks and simulators

**PRIOR, Allen Institute for AI**

May 2020 - Aug 2020

*Research Intern, mentored by Ani Kembhavi, Roozbeh Mottaghi and Judy Hoffman*  
Assessing the robustness of embodied navigation agents to visual and dynamics corruptions

**Deep Learning Group, Microsoft Research AI** May 2018 - Aug 2018  
*Research Intern, mentored by Hamid Palangi*  
Improving goal-driven visually grounded dialog under the presence of an adversarial utterance evaluator

**Visual Intelligence Lab, Georgia Tech** Aug 2017 - Aug 2019  
*Research Assistant, mentored by Prof. Devi Parikh and Prof. Dhruv Batra*  
Worked on problems at the intersection of computer vision and natural language processing with a focus towards building intelligent and interpretable systems.

**CVMLP Lab, Virginia Tech** Jun 2015 - May 2017  
*Research Assistant, mentored by Prof. Devi Parikh and Prof. Dhruv Batra*  
Worked on scene-understanding problems such as object detection and counting in everyday scenes with a downstream focus towards visual question answering

**Robotics Research Lab, IIIT Hyderabad** Dec 2014 - Jan 2015  
*Research Intern, mentored by Prof. K Madhava Krishna*  
Implemented an efficient strategy for a robot to discover, recognize and navigate to a selected few objects among some scattered in an environment, based on a “guess from far and recognize from near” strategy.

**IACS, Kolkata** Jun 2014 - Aug 2014  
*Research Intern, mentored by Prof. Soumitra Sengupta*  
Worked on finding Charged Rotating Black Hole solutions in Einstein-Gauss-Bonnet dilaton coupled gravity and simulated the conditions for the existence of multiple horizons in constant scalar curvature  $f(R)$  gravity.

**Autonomous Underwater Vehicle Team, DTU** Aug 2012 - Aug 2016  
*Undergraduate Researcher, mentored by Prof. R K Sinha*  
**Underwater Acoustics:** Developed and implemented range estimation algorithms for Passive Source Localization from Time Difference of Arrival (TDOA) values in conjunction with machine vision techniques.

**PROFESSIONAL SERVICES**

**Reviewing**  
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2018 - 2023  
Neural Information Processing Systems (NeurIPS) 2018 - 2021  
Association for Computational Linguistics (ACL) 2019  
International Conference on Learning Representations (ICLR) 2019 - 2022  
IEEE International Conference on Robotics and Automation (ICRA) 2021 - 2022  
International Conference on Machine Learning (ICML) 2019 - 2020  
European Conference on Computer Vision (ECCV) 2018  
**Challenge Organization**  
Visual Dialog Challenge CVPR 2020  
(co-organized with Vishvak Murahari)

**TEACHING EXPERIENCE**

**Teaching Assistant**  
CS 4476: Introduction to Computer Vision Spring 2021  
*Instructor: Prof. Judy Hoffman*  
**Teaching Assistant**  
CS 8803: Machine Learning with Limited Supervision Fall 2022  
*Instructor: Prof. Judy Hoffman*

**REFERENCES (available upon request)**

- Prof. Judy Hoffman, Georgia Tech (email: judy@gatech.edu)
- Dr. Ani Kembhavi, PRIOR AllenAI (email: anik@allenai.org)
- Dr. Roozbeh Mottaghi, PRIOR AllenAI (email: roozbehm@allenai.org)
- Prof. Devi Parikh, Georgia Tech (email: parikh@gatech.edu)
- Prof. Mohamed H. Elhoseiny, KAUST (email: mohamed.elhoseiny@kaust.edu.sa)

