Piyush Bagad

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Education

2021-present   **University of Amsterdam**, *The Netherlands*.
Master's degree in Artificial Intelligence, GPA: 9.25/10

2015-2019   **Indian Institute of Technology Kanpur**, *India*.
BS in Mathematics & Scientific Computing, GPA: 9.30/10

Scholarships and Awards

2021-2023   **Amsterdam Merit Scholarship**, *UvA*, Only recipient from the Faculty of Science at UvA.

2021   **Best Paper Award**, *For 'Reproducibility Study of "Counterfactual Generative Networks"'*, Machine Learning Reproducibility Challenge (MLRC) 2021.

2022   **Journal Showcase Poster Session**, *NeurIPS 2022*, Invited to present our MLRC work.

2015, 2018   **Academic Excellence Award**, *IIT Kanpur*, Given to top 10% students in a batch of 850.

Publications

📖 ⓖ 🖥   Thoker, F., Doughty, H., Bagad, P., & Snoek, C. "How Severe is Benchmark-Sensitivity in Video Self-Supervised Learning?". European Conference on Computer Vision (ECCV) 2022.

📖 ⓖ   Bagad, P., Eijkelboom, F., Fokkema, M., de Goede, D., Hilders, P., & Kofinas, M. "C-3PO: Towards Rotation Equivariant Feature Detection and Description". Visual Inductive Priors Workshop, ECCV 2022.

📖 ⓖ   Bagad, P., Hilders, P., Maas, J., & de Goede, D. "Reproducibility Study of 'Counterfactual Generative Networks'". Machine Learning Reproducibility Challenge 2021, ReScience Journal.

📖 ⓖ 🖥   Bagad, P., Dalmia, A., Doshi, J., Nagrani, A., Bhamare, P., Mahale, A., Rane, S., Agarwal, N., & Panicker, R. "Cough Against COVID: Evidence of COVID-19 Signature in Cough Sounds". ArXiv, 2020.

📖 ⓖ 🎥   Bagad, P., Mitra, S., Dhamnani S., Sinha A., Gautam, R., Khanna, H. "Data-Sharing Economy: Value-Addition from Data meets Privacy". Demos, WSDM 2021.

Research Experience

2021-present   **Research Assistant**, *Video and Image Sense Lab*, UvA.
Advisors: Prof. dr. Cees Snoek, Dr. Hazel Doughty

- ○ Do video-language foundation models have a sense of *time*? [Ongoing work]
  - – Designed synthetic data to test if a model can correctly ground temporal prepositions in a video
  - – Showed that existing models adapted from CLIP, struggle on such a simple benchmark
- ○ Do self-supervised video representations generalize beyond conventional benchmarks? [ECCV 2022]
  - – Identified four sensitivity factors to measure generalization: domains, samples, actions, tasks
  - – Distilled our experimental findings in a new benchmark, SEVERE, as a more reliable indicator of generalization

2019-2021   **Research Fellow**, *Wadhwani Institute for AI*.
Mentors: Dr. Rahul Panicker, Dr. Makarand Tapaswi

- ○ Visual Weighing Machine: Estimating weight of newborns from monocular video
  - – Co-developed a pipeline to estimate infant weight from a video through an late-fusion of frame representations
  - – Developed a 3D neonatal model that captures shape variation in newborns in natural poses
- ○ Cough Against COVID: Triaging using cough as a biomarker to detect COVID-19 [ICLRW 2021]
  - – Developed platforms for processing & validation of a large cough dataset with ground truth labels
  - – Built a network based on CNNs operating on spectrograms trained with label-smoothing to handle label noise

2018-2019   **Research Intern**, *Adobe Research India*.
Mentors: Dr. Subrata Mitra, Dr. Atanu R. Sinha

- ○ How can data-sharing occur subject to user-privacy while maintaining its utility? [WSDM 2021]
  - – Proposed a practicable approach using GAN-based representational data with regularizers for privacy-utility
  - – Demonstrated the trade-off between privacy-protection and value addition, through user-controlled knobs