
VIKRAM V. RAMASWAMY

vr23@princeton.edu | <https://www.cs.princeton.edu/~vr23/>

EDUCATION

- 2017 - 2023 **PhD in Computer Science** Princeton University
Advisor: Olga Russakovsky
- 2012 - 2017 **B. Tech & M. Tech in Computer Science** IIT Madras
Advisor: Jayalal Sarma

TEACHING EXPERIENCE

Primary instructor:

- **Freshman Scholars Institute (FSI)** (summer 2022)
 - Taught introductory statistics, R programming and data visualization to incoming first year students
 - Lecture evaluation: 4.4/5, tutorial evaluation: 4.7/5
- **Princeton AI4All** (instructor in summer 2020, **lead instructor** in summer 2021)
 - Taught introductory machine learning to high school students who are under-represented in machine learning.
 - Designed mini projects for students to learn about computer vision.
- Volunteer at **Princeton Learning Cooperative** (2019 - present)
 - 2 hours per week each year, teaching home-schooled students basic and intermediate Python programming.
 - Created a syllabus and prepared Google colab notebooks to introduce students to Python constructs, designed projects for more advanced students.

Teaching assistant:

- Introduction to Machine learning (Princeton, Independent seminar, fall 2022)
- Theory of computation (Princeton, fall 2018, fall 2019)
- Advanced complexity theory (Princeton, spring 2019)
- Uncertainty and computation (Princeton, Independent seminar, fall 2018)
- Discrete mathematics for computer science (IIT Madras, spring 2017)
- Computability and Complexity (IIT Madras, fall 2016)

PUBLICATIONS

Preprints and under review

- **V. V. Ramaswamy**, S. S. Y. Kim, N. Meister, R. Fong, and O. Russakovsky. UFO: A unified method for controlling Understandability and Faithfulness Objectives in concept-based explanations for CNNs. *Under review*, 2022.
- **V. V. Ramaswamy**, S. Y. Lin, D. Zhao, A. B. Adcock, L. van der Maaten, D. Ghadiyaram, and O. Russakovsky. Beyond web-scraping: Crowd-sourcing a geographically diverse image dataset. *Preprint*, 2022
- **V. V. Ramaswamy**, S. S. Y. Kim, N. Meister, R. Fong, and O. Russakovsky. ELUDE: Generating interpretable explanations via a decomposition into labelled and unlabelled features. *Preprint*, 2022.
- N. Meister*, D. Zhao*, A. Wang, **V. V. Ramaswamy**, R. Fong, and O. Russakovsky. Gender artifacts in visual datasets. *Preprint*, 2022

Peer reviewed publications

(α - β) denotes alphabetical ordering of authors

- **V. V. Ramaswamy**, S. S. Y. Kim, R. Fong, and O. Russakovsky. Overlooked factors in concept-based explanations: Dataset choice, concept learnability, and human capability. *CVPR*, 2023
- S. S. Y. Kim, N. Meister, **V. V. Ramaswamy**, R. Fong, and O. Russakovsky. HIVE: Evaluating the human interpretability of visual explanations. *ECCV*, 2022
- A. Wang, **V. V. Ramaswamy**, and O. Russakovsky. Towards intersectionality in machine learning: Including more identities, handling underrepresentation, and performing evaluation. *FAccT*, 2022
- **V. V. Ramaswamy**, S. S. Y. Kim, and O. Russakovsky. Fair attribute classification through latent space debiasing. *CVPR*, 2021.
- (α - β) A. Graur, T. Pollner, **V. Ramaswamy**, S. M. Weinberg. New query lower bounds for submodular function minimization. *ICTS*, 2020.
- (α - β) **V. Ramaswamy**, J. Sarma, K. S. Sunil. Space Complexity of Reachability Testing in Labelled Graphs. *LATA*, 2017, *JCSS*, 2019.

AWARDS AND RECOGNITIONS

- Fellowship from the Canadian Princeton Alumni Fund, for 2017-18
- Sri V Srinivasan Memorial Prize, 2017. Awarded to the student with the highest CGPA across all Dual Degree students at IIT Madras
- Sri K Krishnamurthi Prize, 2014. Awarded for best academic record in academic year 2012-13.

OUTREACH

- Facilitator for the **Gender Group** (2022-2023)
 - Host a support group for transgender, non-binary and gender non-conforming students
- **Princeton FSI** (Summer 2022)
 - Program for incoming first year undergraduate students from first generation / low income families.
- **Princeton AI4ALL** (Summer 2020, Summer 2021)
 - Taught AI to high school students from underrepresented groups in CS.
- Peer Educator, Gender and Sexuality Resource Center (2019 - present, **Leader** 2021 - present)
 - Organize panels to educate students and the general public about creating safe environments for LGBTQIA+ members.

SERVICE

Workshops

- **V. V. Ramaswamy**, W. T. Freeman, L. Fei-Fei, P. Perona, A. Torralba, O. Russakovsky. Future of Computer Vision Datasets. CVPR 2021. <https://visualai.princeton.edu/fcvd/>
- S. S. Y. Kim, **V. V. Ramaswamy**, R. Fong, F. Radenovic, A. Dubey, D. Ghadiyaram. The 2nd Explainable AI for Computer Vision (XAI4CV) Workshop. CVPR 2023.

Reviewer at

- Conferences: CVPR (2022-present), ECCV (2022), BMVC (2022), SATML (2023), ICCV (2023)
- Workshops: RCV (2021, 2022), RAI (2021)