SACHIT MENON

214.620.6006 | sachit.menon@columbia.edu | sachit-menon.github.io

EDUCATION

Columbia University, *New York City, New York (GPA: 4.02/4.00)*
Ph.D. in Computer Science, Ongoing
M.S in Computer Science, Aug. 2020 – May 2022

– Conducting research in representation learning and methods involving large pretrained models; advised by Prof. Carl Vondrick, collaboration with Profs. David Blei & Rich Zemel
– Co-Head TA: Neural Networks & Deep Learning (Graduate), Fall 2021 with Prof. Rich Zemel
  Led weekly class for graduate students jointly with professor on topics in deep learning

Duke University, *Durham, North Carolina (GPA: 3.97/4.00)*
B.S. in Mathematics and Computer Science, Aug. 2016 – May 2020
  Graduation with Highest Distinction; Summa Cum Laude

– TA for Machine Learning (Graduate), Spring 2019 with Prof. Cynthia Rudin
  Led weekly discussions for graduate students, teaching supervised/unsupervised learning

AWARDS

NSF Graduate Research Fellowship
Columbia Presidential Fellowship
Angier B. Duke Scholarship: Duke's flagship merit scholarship awarded to ~15/32,000 undergraduates annually
Barry M. Goldwater Scholarship: Most prestigious undergraduate research scholarship in the sciences (~250 college sophomores and juniors selected nationally)
Alex Vasilos Award: Highest award given by Duke Computer Science
Duke AI for Art Competition 2019 (*Third Place*)
CRA Outstanding Undergraduate Research Award *(Finalist):* One of ~30 chosen as a finalist in North America for the highest award for undergraduates in the computing sciences (awarded by Computing Research Association)
Rhodes, Marshall Scholarship Finalist; Hertz Fellowship Semifinalist (2019)

PUBLICATIONS

Visual Classification via Description from Large Language Models. In Submission. **Sachit Menon**, Carl Vondrick. https://arxiv.org/abs/2210.07183

The Risks of Versatile Models: Resolving Task Bias in Vision-Language Model Representations. In Submission. **Sachit Menon***, Ishaan Chandratreya*, Carl Vondrick.

Non-verbal Communication Using Large Language Models. In Submission. Scott Geng, Revant Teotia, Purva Tendulkar, **Sachit Menon**, Carl Vondrick

Contrastive Learning Effectively Mitigates Posterior Collapse. UAI 2022. **Sachit Menon**, David M. Blei, Carl Vondrick. https://arxiv.org/abs/2207.09535

PULSE: Self-Supervised Photo Upsampling via Latent Space Exploration of Generative Models. CVPR 2020. **Sachit Menon***, Alex Damian*, Nikhil Ravi, Shijia Hu, Cynthia Rudin. https://arxiv.org/abs/2003.03808

New Techniques for Preserving Global Structure and Denoising with Low Information Loss in Single-Image Super-Resolution. CVPR-NTIRE 2018. Yijie Bei*, Alex Damian*, Shijia Hu*, **Sachit Menon***, Nikhil Ravi*, Cynthia Rudin*. https://arxiv.org/abs/1805.03383

RESEARCH EXPERIENCE

CVLab (Columbia University), *Deep Learning Researcher*   July 2020 – Present
New York, New York
- Working on improving learned representations and how they are used, especially via self-supervised learning with vision and language
- Special interest in foundation models and novel inference methods for such models
- Most recently: improving inference for text-image generative models using attention from pretrained language models

Rudin Lab (Duke University), *Deep Learning Research Asst*   January 2018 – May 2020
Durham, North Carolina
- Used new techniques in transfer learning with CNNs, deep generative models for image super-resolution (conversion of low-resolution images to realistic high-resolution images)
- Developed self-supervised, GAN-based method for scale-factor-agnostic super-resolution
- Released code for novel method with 6.7k GitHub stars, top 5 posts of all time on Reddit r/MachineLearning after first week of release (redd.it/hciw10)

INVITED TALKS

ECCV 2022 Workshop on Compositional and Multimodal Perception
UAI 2022 Main Conference (Spotlight)
Deep Learning Classics and Trends (former Uber AI) Reading Group

ACADEMIC SERVICE

Organizer, Learning from Unlabeled Video (LUV) Workshop - CVPR 2021
Reviewer, ECCV 2020, AISTATS 2022, ICCV 2021, CVPR 2022, Neurips 2022

INDUSTRY AND NONPROFIT EXPERIENCE

Duke eNable, *Data Science and Deep Learning Team Lead*   Sep. 2018 – May 2020
Durham, North Carolina
- Executive member of volunteering organization for providing limb replacements to people with limb amputations
- Leading research effort to create prosthetic hands by applying deep learning to electromyographic data
- Teaching weekly course on deep learning to volunteers interested in prosthetic design in order to accelerate development

Neuralink, *Data Science/Machine Learning Research Intern*   May 2018 – Aug. 2018
San Francisco, California
- Leveraged data science and machine learning expertise to contribute to the development of high bandwidth, safe brain-machine interfaces at Elon Musk startup
- Developed techniques for multimodal learning with neural signals; 'neural decoding'

Lineage Logistics, *Data Science Intern*   May 2017 – Jul. 2017
San Francisco, California
- Worked in 7-member team on data science and applied math problems to improve operation of cold storage warehouses responsible for > 30% of US food infrastructure
- Contributed to project for energy grid demand prediction resulting in 34% reduction of energy usage (55,000 homes' worth), saving millions of dollars yearly
Tools: Python, PyTorch, TensorFlow/Keras, Numpy, Scipy, Scikit-Learn, Matplotlib, Seaborn, Pandas