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# Sanjay Subramanian

## Education

2021- **UC Berkeley**
PhD in Computer Science
Advisors: Trevor Darrell and Dan Klein

2015-2019 **University of Pennsylvania**
B.S.E. in Computer and Information Science &
B.S. in Economics (Statistics)
GPA: 3.98/4.00, summa cum laude
Jerome Fisher Program in Management and Technology

## Selected Publications

* indicates equal contribution, $^{\alpha\text{-}\beta}$ indicates alphabetical ordering

- **Sanjay Subramanian**, Evonne Ng, Lea Mueller, Dan Klein, Shiry Ginosar, and Trevor Darrell. Pose Priors from Language Models. *CVPR 2025*.
- Evonne Ng*, **Sanjay Subramanian***, Dan Klein, Angjoo Kanazawa, Trevor Darrell, and Shiry Ginosar. Can Language Models Learn to Listen?. *ICCV 2023*.
- **Sanjay Subramanian**, Medhini Narasimhan, Kushal Khangaonkar, Kevin Yang, Arsha Nagrani, Cordelia Schmid, Andy Zeng, Trevor Darrell, and Dan Klein. Modular Visual Question Answering via Code Generation. *ACL 2023*.
- **Sanjay Subramanian**, William Merrill, Trevor Darrell, Matt Gardner, Sameer Singh, and Anna Rohrbach. ReCLIP: A Strong Zero-shot Baseline for Referring Expression Comprehension. *ACL 2022*.
- Ben Bogin, **Sanjay Subramanian**, Matt Gardner, and Jonathan Berant. Latent Compositional Representations Improve Systematic Generalization in Grounded Question Answering. *TACL 2021*.
- **Sanjay Subramanian**, Lucy Lu Wang, Sachin Mehta, Ben Bogin, Madeleine van Zuylen, Sravanthi Parasa, Sameer Singh, Matt Gardner, and Hannaneh Hajishirzi. MedICaT: A Dataset of Medical Images, Captions, and Textual References. *EMNLP-Findings 2020*.
- **Sanjay Subramanian***, Ben Bogin*, Nitish Gupta*, Tomer Wolfson, Sameer Singh, Jonathan Berant, and Matt Gardner. Obtaining Faithful Interpretations from Compositional Neural Networks. *ACL 2020*.
- **Sanjay Subramanian**, Sameer Singh, and Matt Gardner. Analyzing Compositionality of Visual Question Answering. *Workshop on Visually Grounded Interaction and Language (ViGIL) at NeurIPS 2019*. **Spotlight Paper ($< 12\%$ of submissions)**.
- Eric Wallace, Jens Tuyls, Junlin Wang, **Sanjay Subramanian**, Matt Gardner, and Sameer Singh. AllenNLP Interpret: A Framework for Explaining Predictions of NLP Models. *EMNLP 2019 (demo papers)*. **Best Demo Award**
- Barna Saha$^{\alpha\text{-}\beta}$ and **Sanjay Subramanian**$^{\alpha\text{-}\beta}$. Correlation Clustering with Same-Cluster Queries Bounded by Optimal Cost. *European Symposium on Algorithms (ESA) 2019*.

## Experience

### Research

Summer 2025 **Student Researcher**, *Google DeepMind*
Worked on semantic IDs for document compression and retrieval

Summer 2023 **Research Intern**, *Snap Inc.*
Worked on 3D human motion generation conditioned on language on the Creative Vision team

2019–2021 **Predoctoral Young Investigator**, *Allen Institute for Artificial Intelligence*
Worked on machine learning and natural language processing techniques in the AllenNLP group. Topics ranged from vision and language problems to structured prediction methods.

2018–2019 **Research Assistant in Cognitive Computation Group**, *University of Pennsylvania*
Developed augmentations and evaluations of neural approaches to coreference resolution and temporal relation extraction in Prof. Dan Roth's group

Summer 2017 **REU Research Assistant**, *University of Massachusetts-Amherst*
Worked on theoretical problem of correlation clustering in setting with a same-cluster-query oracle with Prof. Barna Saha. Designed and proved correctness of an exact algorithm and randomized approximation algorithm in this setting.

Summer 2014 **Quarknet Research Intern**, *Fermi National Accelerator Laboratory*
Evaluated the performance of a pattern recognition associative memory chip and modeled its dependence on power consumption and frequency of operations. This chip was a prototype of a device designed for use in the CMS detector at CERN.

### Engineering

Summer 2018 **Software Engineering Intern**, *Google, Inc.*
On hotels monetization team (within Ads), implemented a feature to improve rate of convergence of the automated bidding system. Tested the feature in a live traffic experiment and analyzed data from the experiment. Also wrote a MapReduce-like job to analyze the convergence of automated bidding campaigns.

Summer 2016 **Software Development Intern**, *Akuna Capital*
Developed a web app to allow compliance officer to view and filter trades. Developed a visualization for an options trading strategy.

### Teaching

Winter 2022 **Teaching Assistant**, *Winter AI/ML School in India*
Created assignments for NLP/computer vision and guided students through them at Winter AI/ML School conducted by Ashoka University and Infosys.

2016–2019 **Teaching Assistant**, *University of Pennsylvania*
Taught review sessions, held office hours, and graded assignments for CIS 160 (Mathematical Foundations of Computer Science) in fall 2016, STAT 430 (Probability) from spring 2017 to fall 2018, CIS 320 (Introduction to Algorithms) in Spring 2019

## Awards

2022 NDSEG Fellowship
2020 NSF Graduate Research Fellowship (declined)
2019 EMNLP Best Demo Paper
2019 Walter Korn Award (Penn Engineering; awarded to 1-2 seniors annually)
2015-2019 Bruce Fishkin Scholarship ($20,000)

## Talks

Oct. 2024 *Multimodal Reasoning via Model Chaining: A Review.* Part of a Tutorial at ECCV 2024.
Dec. 2023 *Modular Visual Question Answering via Code Generation.* Berkeley AI Research Workshop on Vision.
Sep. 2023 *Modular Visual Question Answering via Code Generation.* Bay Area Computer Vision Day at Stanford.
July 2023 *Visual Reasoning with Limited Human Labels.* Cohere For AI (virtual).

## Skills

Computing Python, Java, C++, MATLAB, JAX, PyTorch, AllenNLP, LaTeX, NumPy, Matplotlib

## Service

Reviewing COLM ('24'), ECCV '24, EMNLP '22, CVPR ('25, '23,'22), ACL Rolling Review ('24, '22), ICCV ('21), ViGIL Workshop ('21), ACL ('21), NAACL ('21), *SEM ('20), ACL SRW ('19, '20)), SoCalNLP ('19), ESA ('19) (secondary)

Outreach Volunteer instructor at UCLA's LA Computing Circle for high school students (2020), speaker at Program in Algorithmic and Combinatorial Thinking for high school students (2020)

Hack4Impact Between 2015 and 2018, helped to develop software for non-profits. Please see `www.hack4impact.org` for more information.