Melanie Subbiah

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https://melaniesubbiah.github.io

Education

2020 – *present* **Ph.D. Computer Science, Columbia University** (*in progress*)
Topic: Natural Language Processing
Advisor: Kathleen McKeown

2020 – 2024 **M.Phil. Computer Science, Columbia University**
Completed as part of PhD.

2020 – 2022 **M.S. Computer Science, Columbia University**
Completed as part of PhD.

2013 – 2017 **B.A. Computer Science, Williams College**, Magna Cum Laude, Phi Beta Kappa
Thesis: *Using Text Abstraction and LSTM Language Models for Domain-Independent Narrative Generation*
Advisor: Andrea Danyluk

Work Experience

(Feb. – Sep.) 2024 **Early Stage Startups** New York, NY
Advisor/Consultant
Scoping and testing technical requirements for customers of a cost effective green data center solution (BuildAI). Advising on models for educational children's story generation (Nookly).

(Jun.–Aug.) 2022 **Meta** New York, NY
Machine Learning Research Intern - AI for Augmented Reality Input & Interaction
Deep learning to interpret EMG data for human-computer neural interfaces.

2019 – 2020 **OpenAI** San Francisco, CA
Member of Technical Staff - Language
Evaluation suite for GPT-3, co-first-author on the GPT-3 paper (Language Models are Few-Shot Learners).

2017 – 2019 **Apple** Cupertino, CA
Machine Learning Engineer - AI Research
Data center HVAC efficiency, reward function design for autonomous systems, domain randomization for sim-to-real transfer in computer vision, and effective QA methods for crowdsourced annotated data.

(Jun.–Aug.) 2016 **Facebook** Menlo Park, CA
Software Engineer Intern - Site Efficiency
Internal C++ tool to monitor/visualize the efficiency of multi-threaded functions.

(Jun.–Aug.) 2015 **Fathom Information Design** Boston, MA
Data Science Intern - Activity Characterization
Clustering and visualizing activity patterns in daily movement data from wearables.

(Jun.–Aug.) 2014 **Dartmouth College** Hanover, NH
Research Assistant - Epidemiology
Statistical analysis for study of in utero arsenic exposure.

Honors and Awards

2024
- **Outstanding Reviewer**, *EMNLP*
  Recognized as an outstanding reviewer for my thoughtful reviews and productive discussion with authors.
- **Most Influential Scholar Award Honorable Mention**, *AMiner AI 2000*
  Recognized as a top 100 most impactful machine learning scholar between 2014 and 2023.

2023
- **Top 100 AI Achievements from 1943-2021**, *BenchCouncil AI100*
  Recognized for my work on the GPT series of models.
- **PhD Fellowship**, *Amazon/Columbia Center of Artificial Intelligence Technology*
  Funding for two years of the PhD awarded by the Columbia/Amazon AI Center.

2021
- **PhD Fellowship Honorable Mention**, *NSF Graduate Research Fellowship Program*
  Awarded an honorable mention for my submission.

2020
- **Outstanding Paper**, *NeurIPS*
  Awarded for "Language Models are Few-Shot Learners".
- **PhD Fellowship**, *Columbia Presidential and SEAS Fellowship*
  Columbia University funding award for incoming PhD students.

2017
- **Phi Beta Kappa Student Speaker**, *Williams College Commencement*
  Voted by the Phi Beta Kappa students to speak at Williams College graduation.
- **Highest Honors** & **Best Colloquium Presentation**, *Williams College Computer Science*
  Williams College computer science department awards for the graduating class. Awarded for my work on my senior thesis.
- **Shorty Story Writing Honorable Mention**, *Williams College Benjamin B. Wainwright Prize*
  Williams College writing competition for short stories.

Publications

Conference Proceedings/Findings and Journals

[TACL 24] **Subbiah**, **M.**, Zhang, S., Chilton, L. B., & McKeown, K. (2024). Reading Subtext: Evaluating Large Language Models on Short Story Summarization with Writers. In *Transactions of the Association for Computational Linguistics*. TACL, MIT Press.

[EMNLP 24] **Subbiah***, **M.**, Ladhak*, F., Mishra, A., Adams, G., Chilton, L. B., & McKeown, K. (2024). STORYSUMM: Evaluating Faithfulness in Story Summarization. In *Proceedings*. EMNLP, Empirical Methods in Natural Language Processing.

[ACL 23] Storek, A., **Subbiah**, **M.**, & McKeown, K. (2023). Unsupervised Selective Rationalization with Noise Injection. In *Proceedings*. ACL, Association for Computational Linguistics.

[ACL 23] Wang, G., Chillrud, L., Harwood, K., Ananthram, A., **Subbiah**, **M.**, & McKeown, K. (2023). Check-COVID: Fact-Checking COVID-19 News Claims with Scientific Evidence. In *Findings*. ACL, Association for Computational Linguistics.

[EMNLP 22] Levy, S., Allaway, E., **Subbiah**, **M.**, Chilton, L., Patton, D., McKeown, K., & Wang, W. (2022). SafeText: A Benchmark for Exploring Physical Safety in Language Models. In *Proceedings*. EMNLP, Empirical Methods in Natural Language Processing.

[EMNLP 22] Mei, A., Kabir, A., Levy, S., **Subbiah**, **M.**, Allaway, E., Judge, J., … Wang, W. (2022). Mitigating Covertly Unsafe Text within Natural Language Systems. In *Findings*. EMNLP, Empirical Methods in Natural Language Processing.

[NeurIPS 20] Brown*, T., Mann*, B., Ryder*, N., **Subbiah***, **M.**, Kaplan, J. D., Dhariwal, P., … Amodei, D. (2020). Language Models are Few-Shot Learners. In *Proceedings*. NeurIPS, Neural Information Processing Systems (**Outstanding Paper Award**).

[PLoSOne 17] Nygaard, U., Li, Z., Palys, T., Jackson, B., **Subbiah, M.**, Malipatlolla, M., … Nadeau, K. (2017). Cord blood T cell subpopulations and associations with maternal cadmium and arsenic exposures. PLoSOne, PLoS One.

Refereed Workshops

[WASSA ACL 23] **Subbiah***, **M.**, Bhattacharjee*, A., Hua, Y., Kumarage, T., Liu, H., & McKeown, K. (2023). *Detecting Harmful Agendas in News Articles*. WASSA ACL. WASSA Workshop at ACL.

[IWSS ICSWM 21] **Subbiah, M.**, & McKeown, K. (2021). *Understanding Identity Signalling in Persuasive Online Text*. IWSS ICSWM. International Workshop on Social Sensing at ICWSM.

[WiML NeurIPS 18] Maher, M., **Subbiah, M.**, & Apostoloff, N. (2018). *Cascaded Dataset QA*. WiML NeurIPS. Women in Machine Learning at NeurIPS.

[WiML NeurIPS 18] **Subbiah, M.**, lesser, J., & Apostoloff, N. (2018). *Augmenting Training Data with Simulated Images*. WiML NeurIPS. Women in Machine Learning at NeurIPS.

*Co-first authors

Teaching

Spring 2024
- **Guest Lecture**, *Global Teaching Labs - Uruguay*
  Taught by Yi-Tong Tseo, MIT & University of Montevideo

Fall 2023
- **Teaching Assistant & Guest Lecture**, *Natural Language Generation and Summarization*
  Taught by Kathleen McKeown, Columbia University
  TA Quality Overall: 4.7/5.0

Summer 2023
- **Instructor**, *Discrete Mathematics*
  Columbia University
  Course Quality Overall: 4.2/5.0, Instructor Quality Overall: 4.5/5.0

Spring 2023
- **Reviewer**, Quick Start Guide to Large Language Models
  Written by Sinan Ozdemir, Pearson Publishing
- **Guest Lecture**, *Computational Journalism*
  Taught by Mark Hansen, Columbia University

Fall 2022
- **Teaching Assistant & Guest Lecture**, *Natural Language Generation and Summarization*
  Taught by Kathleen McKeown, Columbia University
  TA Quality Overall: 4.9/5.0

Fall, Spring 2021
- **Tutor**, *Introductory Computer Science & Discrete Mathematics*
  Columbia University Athletics

Fall 2014 – Spring 2017
- **Teaching Assistant**, *Introductory Computer Science* and/or *Data Structures*
  Williams College

Invited Speaking

Research Talks and Posters

2024
- **Talk on "StorySumm: Evaluating Faithfulness in Story Summarization"**
  Summarization track at EMNLP
- **Poster on "Reading Subtext: Evaluating LLMs on Short Story Summarization with Writers"**
  Summarization track at EMNLP

Invited Speaking (continued)

- **Talk on "How did we get here?: The rise of large language models and the problem of evaluation"**
  Computer Science Colloquium at Williams College

2023
- **Talk on "Detecting Harmful Agendas in News Articles"**
  WASSA Workshop at ACL

2021
- **Talk on "Understanding Identity Signalling in Persuasive Online Text"**
  International Workshop on Social Sensing at ICWSM

2020
- **Talks on "Language Models are Few-Shot Learners"**
  New York University
  Stanford University
  Columbia University
  Philosophy and Machine Learning Conference at New York University
  G-Research
- **Computer Science colloquium on Language Models**
  Williams College

2018
- **Poster on "Augmenting Training Data with Simulated Images"**
  Women in Machine Learning Workshop at NeurIPS

Outreach Talks

2024
- **Research Overview: Language Models**
  Stuyvesant High School's research class

2023
- **Half-day interactive seminar on ChatGPT for educators**
  Academy for Teachers' Master Class for 25 high school teachers and librarians
- **Interview on "Artificial: Episode 2, Selling Out"**
  The Wall Street Journal's "The Journal" podcast (a top 10 daily news podcast in the US)
- **Talk on "NLP with ChatGPT"**
  Pearson Publishing's AI Catalyst Conference
- **Talk on "ChatGPT: What is it, how does it work, and what's next?"**
  Columbia University Council of Deans
  Columbia University Faculty

2022
- **Guest for "GPT-3 for Natural Language Processing."**
  SuperDataScience podcast (50,000 listens)

2021
- **Interview on "5 Levels of Difficulty: Machine Learning"**
  Wired Magazine YouTube video (2 million views)

2017
- **Phi Beta Kappa Student Speaker**
  Williams College Commencement (~2,000 attendees)

Service

2024
- **Reviewer**, *ACL/EMNLP/COLING/ARR*

2023
- **Panelist**, *Columbia Engineering School Graduate Council info panel on PhD programs*

2022
- **Reviewer**, *EMNLP*
- **Reviewer**, *In2Writing Workshop @ ACL*
- **Reviewer**, *Columbia Pre-submission Application Review program for underrepresented candidates*

2021
- **Co-organizer**, *Workshop on Enormous Language Models at ICLR*

2020
- **Reviewer**, *Columbia Pre-submission Application Review program for underrepresented candidates*

Service (continued)

- **Talk**, *Columbia's "Demystifying the Dissertation" talk series for undergrads*

2019 • **Reviewer**, *Bay Area Machine Learning symposium*

Mentoring

2021 – *present* • **Research Mentor**, *Columbia University research students*
Zara Hall (Undergrad → Masters)
Jacklyn Tsai (Undergrad → Senior Thesis)
Akankshya Mishra (Masters) → EMNLP paper, Google Gemini
Sean Zhang (Masters) → TACL paper
Maksym Bondarenko (Undergrad)
Kate Harwood (Masters) → ACL Findings paper, NLP freelancing
Adam Storek (Undergrad) → ACL paper, Columbia CS PhD
Bobby Yilun Hua (Undergrad) → WASSA workshop paper, Cornell CS PhD
Yu-Chen Huang (undergrad) → Amazon SDE

2022 • **Mentor**, *Williams College CS undergraduate buddy program*

2021 • **Research Mentor**, *Lumiere Education's high school student research program*

2020 • **Program Organizer & Research Mentor**, *OpenAI Scholars (ML transition program)*

2019 • **Mentor**, *Institute of International Education TechWomen program*

2016 – 2017 • **Leader**, *Williams College Underrepresented Identities in CS group*