

Amey Pasarkar

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EDUCATION

Princeton University, Quantitative and Computational Biology

Princeton, NJ

PhD candidate, Advisor: Adj. Bousso Dieng

2027 (expected)

- Awarded 2022 NSF-GRFP Fellowship

Columbia University, Fu Foundation School of Engineering

New York, NY

Bachelor of Science in Operations Research

Aug 2018 – May 2022

- Cumulative GPA: 4.02/4.00, Magna Cum Laude
- Finalist for Computing Research Association Undergraduate Research Award

RESEARCH EXPERIENCE

Princeton Department of Computer Science, Vertaix

Princeton, NJ

PhD Student

March 2023 – Present

- Research on methods for curating and evaluating datasets for generative modeling. Demonstrated utility of our methods on benchmark image, text, and protein datasets.
- Designing faster sampling algorithms through flexible regularization schemes, with applications in molecular dynamics and material design.

Columbia Department of Systems Biology, Itsik Pe'er Lab

New York, NY

Research Assistant

Aug 2019 – Aug 2021

- Developed probabilistic methods for analyzing spatial and temporal microbiome data.
- Created state-space models to recover microbial dynamics from noisy and unstructured sequencing data.

Columbia Department of Computer Science, Internet Real Time Lab

New York, NY

Research Assistance, Advisor: Henning Schulzrinne

Sep 2020 – Dec 2020

- Analyzed FCC data to determine how COVID-19 affected internet usage and network performance in the US.

PROFESSIONAL EXPERIENCE

Amazon, AWS Safety Engineering

Seattle, WA

Software Development Engineer

May 2021 – Aug 2021

- Built and deployed NLP pipeline for performing context-based queries on documents detailing incidents in all Amazon services. Model results helped identify vulnerabilities in services and improve their reliability.

Clinton Group

New York, NY

Activist Hedge Fund Intern

June 2019 – Aug 2019

- Utilized Python and Excel to support investment analysis through data-driven analytical insights and visualizations.

PUBLICATIONS & PRESENTATIONS

- **Amey P. Pasarkar**, Adj. Bousso Dieng. "Cousins of the Vendi Score: A Family of Similarity-Based Diversity Metrics for Science and Machine Learning." *AISTATS*, 2024.
- **Amey P. Pasarkar**, Gianluca M. Bencomo, Simon Olsson, Adj. Bousso Dieng. "Vendi sampling for molecular simulations: Diversity as a force for faster convergence and better exploration." *Journal of Chemical Physics*, 2023.
- **Amey P. Pasarkar**, Tyler A. Joseph, and Itsik Pe'er. "Directional Gaussian Mixture Models of the gut microbiome elucidate microbial spatial structure." *mSystems*, 2021.
- **Amey P. Pasarkar**, Tyler A. Joseph, and Itsik Pe'er. "Probabilistic modelling of the gut microbiome's spatial structure using directional Gaussian mixture models." *Probabilistic Modeling in Genomics*, 2021 (Poster presentation).
- Jessica De Oliveira Moreira, **Amey P. Pasarkar**, ..., Henning G. Schulzrinne. "Social Distancing and the Internet: What Can Network Performance Measurements Tell Us?" *The Research Conference on Communications, Information, and Internet Policy* 48, 2021.
- Tyler A. Joseph, **Amey P. Pasarkar**, and Itsik Pe'er. "Efficient and Accurate Inference of Mixed Microbial Population Trajectories from Longitudinal Count Data." *Cell Systems*, 2020.
- Tyler A. Joseph, **Amey P. Pasarkar**, and Itsik Pe'er. "Efficient and accurate inference of microbial trajectories from longitudinal count data." *RECOMB*, 2020.