## Sayali A. Alatkar

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### Education

**University of Wisconsin-Madison**, Madison, Wisconsin USA

- Ph.D. in Computer Science, Anticipated May 2025
- Interests: interpretable machine learning, graph neural networks, attention models, optimal transport, single-cell genomics (scRNA-seq, scATAC-seq), multimodal learning, personalized functional genomics
- Advisor: Daifeng Wang

**Stony Brook University**, Stony Brook, New York USA

- M.S. in Computer Science, May, 2020
- Master's Thesis: Detecting Smart Home Activity through Network Traffic Signatures.
- Committee: Samir Das (advisor), Amir Rahmati, Michalis Polychronakis, Vasudevan Nagendra

**Pune University**, Pune, India

B.E. in Computer Engineering, May, 2018

### Publications

**Peer-reviewed papers**

**Sayali Alatkar**, Daifeng Wang, CMOT: Cross-Modality Optimal Transport for multimodal inference, *Genome Biology*, 24, 163, 2023

Pramod Bharadwaj Chandrashekar, **Sayali Alatkar**, Jiebiao Wang, Gabriel E. Hoffman, Chenfeng He, Ting Jin, Saniya Khullar, Jaroslav Bendl, John F. Fullard, Panagiotis Roussos, Daifeng Wang, DeepGAMI: Deep biologically guided auxiliary learning for multimodal integration and imputation to improve phenotype prediction, *Genome Medicine* 15, 88 (2023)

Chirag Gupta, Jielin Xu, Ting Jin, Saniya Khullar, Xiaoyu Liu, **Sayali Alatkar**, Feixiong Cheng, Daifeng Wang, Single-cell network biology characterizes cell-type gene regulation for drug repurposing and phenotype prediction in Alzheimer's disease, *PLoS Computational Biology*, 18(7): e1010287, 2022

### Professional Experience

**UW-Madison**, Madison, WI, USA
Research Assistant, Daifeng Wang Lab **August, 2021 - present**

- Developed novel method for cross-modality imputation in single-cells
- Trained several deep learning models (e.g. MLP, graph neural networks, CNN, variational autoencoders) for classification and regression tasks
- Currently working on graph neural networks and attention models
- Experience working on large single-cell multi-omics, spatial, and, genotype data
- Assisted on several grant proposals (NIH,NSF)

**Siemens Corporate Research**, Princeton, NY, USA
Research intern, Cybersecurity Research Group **May, 2019 - August, 2019**

- Implemented an OCR-based homoglyph detection tool from literature for domain service monitoring
- Implemented new features for Siemens threat news portal

## Teaching Experience

**UW-Madison**, Madison, WI, USA
Teaching Assistant-Intro to Python **August, 2020 - May, 2021**

## Posters/Talks

**Posters**

- RECOMB'2021
- ISMB'2022

**Talks**

- RSG-DREAM'2023

## Honors and Awards

UW Madison CS Summer Research Fellowship
Usenix Security'21 Diversity Grant
Accepted into NSF Sponsored GREPSEC V Workshop'21

## Relevant Coursework

**UW-Madison Graduate**

- Machine Learning (Fred Sala)
- Mathematical Foundations of Machine Learning (Robert Nowak)
- Advanced Bioinformatics (Daifeng Wang)

## Skills

- Languages: Python, R.
- Packages: Pytorch, Tensorflow, CUDA, Pytorch Geometric, DGL
- Applications: Anaconda, Cytoscape, Flask
- Operating Systems: Ubuntu, Windows.