

Ben Badnani

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EDUCATION

Boston University, Boston, MA

Master of Science in Artificial Intelligence - GPA: 3.74

September 2023 – August 2024

Bachelor of Arts in Computer Science

September 2018 – May 2023

- Relevant Courses: Machine Learning, Deep Learning, Computer Vision, Stochastic Processes, Real Analysis

Activities

Teaching Assistant for CS 543: Algorithmic Techniques for Taming Big Data

January 2023 – May 2023

Vice President, Tech Director, TAMID Group at Boston University

January 2022 – May 2022

EXPERIENCE

Boston University

May 2023 – Present

Theoretical Computer Science Research: Universal Sketching

- Working on a thesis for the [Universal Sketching Problem](#), focusing on algorithms that efficiently process large scale datasets given in a streaming setting.
- Improves on the currently existing theory by covering a much broader class of analytic functions using at most polylogarithmic space, enhancing capabilities in handling and processing large scale datasets.

Boris FX, Boston

May 2022 – October 2022

Machine Learning Researcher – Python (Pytorch/Hugging Face/OpenCV/Kornia)

- Researched and implemented deep learning solutions for temporally consistent monocular video depth estimation, contributing to advancements in image/video generation and large scale generative model training.
- Pioneered the design of new neural network architectures, incorporating concepts from optimal transport, convex optimization, projective geometry, GANs, VAEs, and diffusion models.
- Optimized generative models for performance, including quantization and other techniques to reduce model size and improve inference speed.

CBS News, Boston

September 2021 – December 2021

Data Science Intern - Python

- Working with large scale datasets from US census data, used statistical inference to correlate broadband access with neighborhood characteristics (race composition, median income, etc.) per zip code and block group using US census datasets.
- Created an interactive map of Boston displaying demographic and economic data per the client's request.
- As Team Lead collaborating with BU Spark, facilitated weekly meetings and coordinated progress milestones with the project manager and engineering team.

Adverifai, Tel Aviv

September 2021 – December 2021

Multimodal Generative Modeling Engineer Intern – Python (Pytorch/Spacy/NLTK/Scikit-learn), Azure

- Used computer vision, NLP, and multimodal machine learning models to map advertisements to products with a confidence score, and predict categories for ads that were not mapped to products, in a scalable fashion for later use on large scale datasets.
- Increased model accuracy from 81.62% to 86.87% on the validation set through optimization and tuning.

TECHNICAL SKILLS

Python, C (C99), C++, Bash, Java, JavaScript, PyTorch, Hugging Face, OpenCV, Kornia, scikit-learn, spaCy, NLTK, Azure.

PROJECTS

Bouncer - C/Python: Developing a sketching algorithms Python library, built in C, to work on large streams of data.

Medium Articles: Writing an introductory guide for the Count-Min Sketch in my free time: [Universal Hashing and The Count-Min Sketch: Analysis and Implementation in Cython](#).