BHAVIKA DEVNANI

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EDUCATION

Georgia Institute of Technology, Atlanta, Georgia - *PhD in Computer Science*
AUG 2024 -

- PhD Candidate in Hoffman AI Research Lab
- Advised by Judy Hoffman

Georgia Institute of Technology, Atlanta, Georgia - *Masters in Computer Science & Neuroscience*
JAN 2021 - DEC 2022

- Concentration in Machine Learning, GPA: 4.0

Georgia Institute of Technology, Atlanta, Georgia - *Bachelors in Computer Science*
AUG 2013 - AUG 2017

- Concentration in Artificial Intelligence and Theory.

PUBLICATIONS

ELSA: Learning Spatially Aware Language-Audio Embeddings - **Bhavika Suresh Devnani**, Skyler Seto, Zak Aldeneh, Alessandro Toso, Elena Menyaylenko, Jonathan Sheaffer, Miguel Sarabia (Under Review at NeurIPS 2024 - current score is 6.5, waiting for final AC response.)

ZSON: Zero-Shot Object-Goal Navigation using Multimodal Goal Embedding - Arjun Majumdar*, Gunjan Aggarwal*, **Bhavika Suresh Devnani**, Judy Hoffman, Dhruv Batra (Accepted at NeurIPS 2022, CoRL Workshop 2022)

Bi-Directional Self-Attention for Vision Transformers - George Stoica, Taylor Hearn, **Bhavika Suresh Devnani**, Judy Hoffman(Accepted at NeurIPS Vision Transformers Workshop 2022 - **Won Best Paper**)

WORK EXPERIENCE

Apple (AIML) - *ML Research*

DEC 2022 -

- Working on the AIML team led by Dr. Samy Bengio.
- Optimization of representation learning algorithms.
- Current Focus: Multi Modal Foundation Models, with focus on Audio and Language

Georgia Institute of Technology, Atlanta, Georgia, USA - *Research Assistant*

JAN 2021 - DEC 2022

- A wide range of projects exploring few/zero-shot learning in Computer Vision and Multimodal (Vision and Language) Models.
- Project Advisors: Judy Hoffman and Dhruv Batra

Emory Department of Bioinformatics, Atlanta, Georgia, USA - *Research Assistant*

JULY 2021 - SEPT 2021

- Building pipeline to help deploy and query from Machine Learning models trained for a variety of medical tasks eg. predicting the probability of ARDS (Acute Respiratory Distress Syndrome).

Georgia Institute of Technology, Atlanta, Georgia, USA - *Teaching Assistant*

JAN 2014 - Current (With breaks)

Taught, corrected assignments, and held office hours for the following classes:

- **Graduate Deep Learning** in FALL '21, SPRING '22
- **Graduate Machine Learning** in SPR '21, SUM '22
- **Introduction to Computer Science** in SPR '14, FALL '14, SUM '17
- **Discrete Math - Honors** in SPR '17, FALL '15
- **Algorithms** in SPR '16, FALL '16
- **Automata and Complexity** in SPR '15

Delivery Hero (Talabat), Dubai, UAE - *Senior Data Scientist, Data Team*

SEPT 2020 - Dec 2020

- Working on personalization models for restaurant recommendations and building the ML infrastructure pipeline for initial models.
- Whenever a vendor makes a change to their menu, we had an agent manually approve or reject it. I analyzed the pipeline and wrote up a plan(with demo implementations) to automate this completely.
- Leading the bi-weekly ML paper reading group.

New York University - Satellite Campus, Abu Dhabi, UAE - *Syllabus Design*

JULY 2020 - AUG 2020

- Designed and wrote up the content(lectures and recitations) for a new course, Programming for Economists.
- All lectures are interactive and written in Google collab to encourage students to follow along with the lectures outside of class as well. Reference: Dr Bedoor AlShebli

Quora Inc, Mountain View, California, USA - *Machine Learning Engineer, Ranking and Personalization*

SEPT 2019 - MARCH 2020

- Improved accuracy of the Neural Net that predicts preferred answers increasing revenue by 4%
- Set up the foundations of incremental training for Neural Networks reducing training time by 90%
- Reduced the training time of the model that predicts the questions suitable for the user by 50%.

Quora Inc, Mountain View, California, USA - *Software Engineer, Machine Learning Platform*

SEPT 2017 - SEPT 2019

- Migrated the Machine Learning Model Service to Kubernetes.
- Engineered feature logging pipelines thus ensuring immediate and consistent features across our datastores.
- Worked to unify all services that access trained machine learning models.
- Improved the stability and performance(uptime) of the "Ask to Answer" service backend by ~2%.
- Architected and built an in-house logging library from scratch for C++ services.

LinkedIn (Microsoft), Mountain View, USA - ***Software Engineering Intern, Trust and Security***
MAY 2016 - AUG 2016

- Worked on a brand new tool within the security stack that predicts whether an incoming invitation to connect has a high probability of being spam and stops it in its tracks.
- Designed and presented the specifications for the tool (architecture, data flow, and task breakdown).
- Took the project to completion and deployment in the production environment.

Pindrop Security, Atlanta, USA - ***Software Engineering Intern, Cloud***
MAY 2015 - AUG 2015

- Refactored and wrote web scrapers for data collection and analysis - this was put into production. Visualized this data on ElasticSearch and predicted spam trends using this information.
- Used the Pindrop API to create an android application that blocks and reports spam calls.

SKILLS

Technologies: Pytorch, Tensorflow, Linux, Cloud Systems(AWS and Azure), Kubernetes

Domains: Deep Learning, Computer vision, Chemistry(Undergraduate level), and Biology (Undergraduate level).

VOLUNTEERING AND LEADERSHIP

Paper Airplanes - ***Online English Tutor***

SUMMER 2021 - Current

- Tutoring conflict-affected students residing in Syria
- Primarily, my role is to teach them English.

StreetCode, Palo Alto, California, USA - ***Mentor***

JAN 2018 - MAR 2020

- Taught students computer science by mentoring them individually on their own personal projects (building games like snake/tic-tac-toe from scratch in python). These students belonged to less privileged areas of the Bay area, specifically the East Palo Alto Region.

Georgia Institute of Technology, Atlanta, USA - ***Tutor, and Researcher for RiseUp***

JAN 2016 - AUG 2017

- Tutored high school students in AP Java using our online interactive textbook (http://interactivepython.org/runestone/static/JavaReview/index.html) and Google Hangout sessions.
- Analyzed textbook interaction logs to associate students' affinity for certain learning methods and the correlation with the practice and score improvement.