

Athiya Deviyani

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RESEARCH INTERESTS

Trustworthy machine learning and natural language processing; societal impacts of intelligent systems; AI for social good

EDUCATION

Carnegie Mellon University, Pittsburgh, PA, United States August 2021 - May 2023

MS in Artificial Intelligence and Innovation, GPA: 4.07

- Advisor(s): Dr. Michael Shamos, Dr. Alan W. Black, Dr. Maarten Sap
- Relevant courses: Advanced Deep Learning (PhD), Advanced NLP (PhD), Deep Reinforcement Learning (PhD), Multimodal Machine Learning (PhD), Computational Ethics for NLP, Machine Learning with Large Datasets

The University of Edinburgh, Edinburgh, Scotland, United Kingdom September 2017 - May 2021

BSc (Hons) in Artificial Intelligence and Computer Science, GPA: 4.00 (First Class Honors)

- Honors thesis: Assessing Dataset Bias in Computer Vision (received outstanding classification)
- Research advisor(s): Dr. Ajitha Rajan, Dr. Hakan Bilen, Dr. Steven R. Wilson
- Relevant courses: Machine Learning, Foundations of NLP, Automatic Speech Recognition

PUBLICATIONS

Men Have Feelings Too: Debiasing Sentiment Analyzers using Sequence GANs ([paper](#))

Athiya Deviyani*, Haris Widjaja*, Mehak Malik*, Daniel Hoskins*

In submission to the *AI for Social Good Workshop* at *AAAI 2023*

Text Normalization for Speech Systems for All Languages ([paper](#), [oral presentation](#))

Athiya Deviyani*, Alan W. Black*

Published in the *Speech for Social Good Workshop* at *INTERSPEECH 2022*

Assessing Dataset Bias in Computer Vision ([paper](#))

Athiya Deviyani*

Published in *Outstanding Informatics Undergraduate Dissertations* at *The University of Edinburgh 2021*

ACADEMIC RESEARCH EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA, United States December 2021 - present

Graduate Research Assistant

- Conducted research under Dr. Alan W. Black to build a tool for generalizable text normalization for speech synthesis using the Flite synthesizer and a Python backend, published in the *Speech for Social Good* workshop at *INTERSPEECH 2022*
- Audited text-to-image diffusion models (DALLE2, StableDiffusion) for gender, race, and age-related social biases under Dr. Maarten Sap, via controlled prompt generation and qualitative and quantitative analysis of generated images using a zero-shot classification method using CLIP (in preparation for *FACCT 2023*); this work is part of a collaboration with AI2 to document the LAION-5B dataset used to train StableDiffusion

SMASH Lab, The University of Edinburgh, Edinburgh, United Kingdom June 2020 - March 2021

Research Assistant

- Worked with the Social Media Analysis and Support for Humanity (SMASH) research group on a project using NLP tools (GenSim, FastText, SpaCy) and a variety of ML classification techniques to expand the LIWC psycholinguistic lexicons for improved coverage of online slang in social media using UrbanDictionary corpus

PROFESSIONAL EXPERIENCE

Apple, Seattle, WA, United States May 2022 - August 2022

Applied Machine Learning Research Intern

- Implemented and evaluated a GraphSAGE Graph Neural Network (GNN) with a recall at 3 rate (R@3) of 0.147 using the Deep Graph Library (DGL) framework and PyTorch to suggest related questions to be used in various applications such as Siri search and web answers
- Conducted experiments on the effect of implementing diversity penalties on the beam search algorithm used in a huggingface encoder-decoder Transformer architecture to diversity of query suggestions and model perplexity

Goldman Sachs, London, United Kingdom

June 2021 - August 2021

Summer Analyst

- Designed and implemented a data processing pipeline for capital reporting and analysis

Google, London, United Kingdom

June 2020 - September 2020

Software Engineering Intern

- Implemented an algorithm that selects a user's most interesting visits within a selected timeframe for the Timeline feature on Google Maps

Google, Zurich, Switzerland

July 2019 - September 2019

Software Engineering Intern

- Worked on an end-to-end project within the YouTube Creator Commerce team specializing on Growth and User Engagement to create a Channel Shop Tab for creators

HONORS and AWARDS

Class Prize for Artificial Intelligence and Computer Science (highest overall GPA) (pdf)	2021
Outstanding Informatics Undergraduate Thesis	2021
Best Health Hack at Big Red Hacks 2021, Cornell University	2021
1st place Transferwise challenge at HackCambridge4D	2019
2nd place overall and 3rd place Amazon AWS challenge at OxfordHack	2018

TEACHING EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA, United States

August 2021 - present

Graduate Teaching Assistant

- Provided office hours, co-delivered lectures and recitations ([video](#)), designed and graded assignments for the following graduate courses: 11-631 Data Science Seminar (Prof. Eric Nyberg, Fall 2021), 11-737 Multilingual Natural Language Processing (Prof. Graham Neubig, Spring 2022), 10-617 Intermediate Deep Learning (Prof. Ruslan Salakhutdinov, Fall 2022), 11-830 Computational Ethics for NLP (Prof. Maarten Sap, Spring 2023)

The University of Edinburgh, Edinburgh, United Kingdom

September 2020 - June 2021

Teaching Assistant

- Lab demonstrator for Foundations of Data Science (INFR08030), Introductory Applied Machine Learning (INFR10069, INFR11152), and Cognitive Science (INFR08020) at the University of Edinburgh, and tutor and marker for Introductory Applied Machine Learning (INFR10069, INFR11152), Software Testing (INFR10057)

NOTABLE RESEARCH PROJECTS

Causal Reasoning through Conceptual Explanation Generation ([paper](#), [poster](#))

Athiya Deviyani*, Mehak Malik*, Prasoon Varshney*

In preparation for submission to the *Association of Computational Linguistics Conference 2023*

Multimodal Emotion Recognition in Conversation ([paper](#), [poster](#))

Athiya Deviyani*, Abuzar Khan*, Njall Skarphedinsson*, Prasoon Varshney*

In preparation for submission to *International Conference on Machine Learning 2023*

Towards an Unbiased Language Model for Hate Speech Classification ([paper](#))

Athiya Deviyani*

Individual research project for *Computational Ethics for NLP*

VOLUNTEERING and SERVICE

Grace Hopper Celebration representative from Carnegie Mellon SCS	2022
Machine Learning Instructor at Bangkit Academy	2020-2021
Data Science Instructor and Curriculum Organizer at Generation Girl	2020-2021
Python and Web Development Instructor at CodeFirstGirls	2020-2021

SKILLS and INTERESTS

Technical Python (Tensorflow, PyTorch), Java, Haskell, SQL, JavaScript, C++, Isabelle, MATLAB

Languages Indonesian, English, Malay, Mandarin

Interests Piano and Violin (ABRSM Grade 5), Singing, Dance, Guitar, Muay Thai, Kickboxing