Tabitha Oanda

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personal website: https://github.com/TabithaKO

Education

- **Brown University** — Expected Start: September 2023
  Doctor of Philosophy in Computer Science (Enrolled) — Providence, RI
- **Boston University** — May 2022
  Bachelor of Arts in Computer Science: GPA 3.54 — Boston, MA
- **Wheaton College** — Sep 2018 - May 2019
  Bachelor of Arts (undeclared major): GPA 3.7 — Boston, MA

Research Experience

During my undergraduate career I accumulated significant experience in computer vision research. My journey began with simple experiments and evolved to pivotal roles overseeing project design, paper writing, and presenting the research findings to different audiences. Below I mention the three research experiences I believe are most relevant for the current application. A full chronological account of my research experiences is on my personal website .

- **Research Fellow: Computer Vision** — Nov 2022 - Current
  Paperspace Co. — Brooklyn, NY
  - **Principal Investigators:** Tabitha Oanda, Dillon Erb
  - **Research Topic:** Exploring SOTA Generative Models
  - **Summary:** In this project I analyze image quality metrics for several state-of-the-art image generation models like GAN, NeRF, and diffusion models. This work helps me understand and support the research interests of customers on the Paperspace platform.
- **Research Intern: Computer Vision** — Jun 2022 - Aug 2022
  Microsoft Research — Redmond, WA
  - **Principal Investigators:** Vibhav Vineet, Neel Joshi
  - **Research Topic:** Robustness of Neural Radiance Fields (NeRFs)
  - **Summary:** In this project I perform multiple experiments on a preexisting NeRF model to establish a range of intrinsic and extrinsic camera parameters and data constraints required to train a NeRF model.
- **Research Assistant** — Sep 2021 - May 2022
  Bargal Lab, Boston University — Boston, MA
  - **Principal Investigator:** Sarah Adel Bargal
  - **Research Topic:** Robustness of Generative Adverserial Networks (GANs)
  - **Summary:** In this project I curated an image dataset of Black celebrities designed to augment the CelebA dataset. I used both of these datasets to train a preexisting style- transfer GAN and perform multiple experiments to evaluate the robustness of the new GAN in generating faces of darker skinned people. I am in the process of writing a paper based on the research findings.
  - T. Oanda, N. Ruiz, S. A. Bargal. *UniFace: Cross Domain Style Transfer*, 2022. [Manuscript in submission].

Self-directed Projects

I am passionate about exploring the applications of computer vision and robotics. Below I describe 3 of the most relevant projects for this application, but my personal website has all of my projects.

- **Computer Vision Controlled Robotic Arm** — Aug 2020 – Aug 2021
  project link — Boston, MA
  - **The goal** of this project was to build and program a robotic arm that could mimic the gestures of a human arm in a video in real time. In order to achieve this goal I used python to program the computer vision application on the Raspberry Pi and I used C programming to program an Arduino for prototyping the robotics. **The result** was a robotic arm that could mimic arm gestures with a slight lag due to hardware constraints.

- **Computer Vision Controlled Self-driving Toy Car** Jun 2020 – Aug 2020
  project link Boston, MA
  - The **goal** of this project was to build and program a robotic toy car that could move on the ground and respond to certain obstacles in its path. In order to achieve this goal I used python to program the computer vision application on the Raspberry Pi and I used C programming to program an Arduino for the robotics. **The result** was a car that could maneuver a simple obstacle course on the ground. The project was adopted by the Data Science in Action summer program at Harvard University.
- **Hairstyle Detector** Aug 2020
  project link Boston, MA
  - The **goal** of this project was to create an iPhone application that could classify hairstyles in images from my gallery. In order to achieve this goal I collected and annotated a dataset of different hairstyles common to Black women and trained an image classification model. **The result** was a simple app that I built using Swift that utilized the hair classification model to label hairstyles in images in my phone's gallery.

Selected Coursework

- Computer Vision (CS 565: Boston University)
- Tools of Data Science (CS 506: Boston University)
- Introduction to Data Science (CS 391: Boston University)
- Directed Study: Deep Learning (CS 492: Boston University)
- Machine Learning (DeepLearning.AI Coursera)

Teaching Experience

- Course Assistant: Computer Systems, Boston University (Fall 2020)
- Course Grader: Artificial Intelligence, Boston University (Fall 2021)
- Program Coordinator: AI4ALL (Spring 2021)
- Teaching Assistant: Data Science in Action Summer Program, Harvard (Summer 2020,2021)

Honors and Awards

- Computer Science Department Award for Academic Excellence (Spring 2022)
- Boston University Scarlet Key Honor Society (Fall 2021)
- Boston University Dean's List (Spring 2021, Spring 2022)
- Undergraduate Research Opportunities (UROP) Grant (Summer 2020)
- Featured Researcher UROP (Summer 2020)

Guest Talks

- **Summer 2021** Guest Lecture: Boston University Deep Learning Course (CS 523)
- **Spring 2021** Computer Vision Workshop: Code For Africa
- **Spring 2021** Arduino Day: Featured Community Member
- **Summer 2020** Undergraduate Research Opportunities Program Symposium
- **Summer 2020** Nairobi Women in Machine Learning and Data Science

Professional and Outreach Activities

- Lead Ambassador and Co-Founder, Stem Archive (Sep 2020 - Dec 2020)
- Events Coordinator, Boston African Students Association (2020-2021)