Nahom T. Abera

(770) 545-9571 | **nahomtesfahun001@gmail.com** | **Website** | **LinkedIn** | **GitHub** | **Snellville, GA**

EDUCATION

Bachelor of Science in Computer Science | Georgia State University | Atlanta, GA **Expected: May 2026**

GPA: 4.0+/4 (See **Official Transcript**)

Relevant Coursework: Algorithms, Data Structures, Digital Image Processing, Computer Organization, Mobile Application Development, Probability & Statistics, Programming Language Concept, Software Development, System-Level Programming

Honors and Awards: GSU Campus Atlanta 100% Scholarship, GSU President's List (Fall 22, Spring 23, Fall 23, Spring 24)

SKILLS

Programming Languages: C, Dart, Java, Python, SQL

Libraries: TensorFlow, Keras**,** OpenCV, NumPy, Pandas, Matplotlib, Flutter, Flask, Tkinter, JDBC

Tools: Arduino, CSS, Firebase, Git, GitHub, HTML, JSON, Jupyter, Linux, MySQL, Raspberry Pi, Robotic OS(ROS)

EXPERIENCE

Undergraduate Researcher | Georgia State University| Atlanta, GA **Apr 2024 - Present**

- Conducting research under Dr. Ashwin Ashok on "Development of Waste Collection Mobile Robot Equipped with Robotic Arm and Trash Sorting Bin using **Robotic Algorithms, Computer Vision,** and **Deep Learning**."
- Designing and 3D printing mechanical components of the robot with integration of LiDAR sensor, cameras and actuators.
- Integrating mechanical parts with Robotic Operating System, Arduino/Raspberry Pi control units and electric motor.
- Developing robotic algorithm using **Python** and **C** for real-time obstacle detection and environment mapping, incorporating **SLAM** and **LiDAR** technology to enable autonomous navigation for the robot.
- Implementing **YOLO-**based **Computer Vision** algorithms to enable robot to detect trash with **Python's OpenCV** library.
- Building waste sorting mechanism for the intelligent trash bin using rotators and actuators to segregate the disposed trash into the designated compartment with **Convolutional Neural Networks (CNN)** using **Python's TensorFlow** library.

Undergraduate Teaching Assistant | Georgia State University| Atlanta, GA **Jan 2024 - Present**

- Tutoring students on core computer science courses, including Python and C programming, data structures and algorithms.
- Offering one-on-one and group study sessions to assist students understand core CS concepts, improve coding skills, and prepare for exams, which contributed to an increase in the average GPA of Computer Science students from 3.31 to 3.34.

PROJECTS

Smart Garage Door Control System (Link) | Raspberry Pi, Python, Dart, Flutter, Firebase **May - Jun 2024**

- Built system to control and monitor garage door using a Mobile App, Firebase Cloud and Raspberry Pi microcontroller.
- Setup the hardware system with Raspberry Pi, 4-channel relay, and magnetic switches connected to the garage door opener.
- Developed Python script to run on Raspberry Pi to read open/close commands from Firebase Firestore, execute them thru the relay switch to open/close the garage door, and update the garage door status based on magnetic switch readings.
- Set up Firebase Firestore for real-time command/status update and secured login/sign up with Firebase Authentication.
- Created Flutter Mobile and Web app to send command and view door status, integrated with Firebase Firestore and Auth.

Jobify.AI (Link) | Python, Dart, Flutter, Firebase, OpenAI API, Gmail API **Aug 2024 - Present**

- Developing an intelligent system consisting of a Mobile App and a Python script to automate job application tracking.
- Building Python script to process incoming emails using Gmail API and using OpenAI API to classify the emails as job application-related or not.
- Integrating functionality into the Python script to extract key info from job application related emails such as company name, job title, location, job number and status using OpenAI API and update/create job entries in Firebase Firestore.
- Designing Mobile and Web app using Dart and Flutter that reads data from Firestore to present it with graph visualizations (pie charts, bar charts, line charts, and tables) for users to analyze job application status, trends, and progress over time.

IntelliDrone System (Link) | Python, OpenCV, NumPy, DJI Tello Drone **Jan - Mar 2024**

- Developed a drone system using Python, and OpenCV to enable the drone to recognize and respond to hand gestures.
- Integrated face detection algorithms to enable the drone to lock onto and follow a specific individual's face.
- Developed a selfie drone subsystem using real-time body pose estimation with OpenCV and NumPy, enabling the drone to autonomously start and stop tracking based on full and half-body poses.
- Utilized Python and OpenCV to visualize the drone's flight path with graphs for refinement of tracking algorithms.

Uber Eats Clone (Link) | Dart, Flutter, Firebase **Mar 2024**

- Developed a food delivery app for Android and iOS devices using Flutter and Dart, containing a dynamic restaurant listing, detailed menu views, and integrated Mapbox for location mapping.
- Developed order management features including cart review and order history tracking using Firebase Firestore database.
- Utilized Firebase Authentication to manage user accounts, support email/password login and third-party providers.