

# Ahnaf Tajwar

U.S. Citizen • NYC • [www.linkedin.com/in/ahnaf-tajwar](https://www.linkedin.com/in/ahnaf-tajwar) • [tajwara@bu.edu](mailto:tajwara@bu.edu)

## Education

### Boston University

M.S. Software Engineering, *College of Arts and Sciences*  
B.S. Mechanical Engineering, *College of Engineering*

May 2024, GPA: 3.9/4.0

May 2021, GPA: 3.8/4.0, Dean's List

**Relevant Coursework:** Data Science, Software Engineering, Software Design and Patterns, Advanced Programming Techniques, Data Structures and Algorithms, Mobile App Development, Web App Development, Information Structures with Java, Product Design

**Skills:** Python, Java, Kotlin, C, C++, HTML, CSS, JavaScript, React.js, Flask, Android Studio, Selenium, SQL, Apache Spark, Databricks, Microsoft Azure, Kubernetes, AWS, S3, ETL, Pandas, NumPy, scikit-learn, Git, *English, Bengali, Spanish, SAE 5 Practitioner*

## Work Experience

### General Motors

Warren, MI

Software Engineer - AI/ML Mapping Software

Feb 2023 – Current

- Developed software to process **several hundred terabytes** of data to be used in map creation for autonomous vehicles and **deep learning models**, enhancing data processing speed and accuracy using **Python** and **Apache Spark**
- Identified **geospatial** locations lacking cellular coverage using vehicle telemetry data and produced **Mosaic** visualizations covering **all of North America**, resulting in improved customer experience
- Rearchitected map matching pipeline by persisting redundant data and queries to **Hive**, reducing run time by **40%**
- Refactored data ingestion **ETL pipelines** to perform appropriate transforms and **automate delivery**
- Optimized key mapping algorithm using **graph theory** for assigning critical map components with **100%** coverage
- Created **unit test** suites deployed through **GitHub Actions** improving **CI/CD** and achieving **85%+** line coverage
- Leveraged backend and data processing tools such as **Kubernetes, Amazon S3, Databricks, and Microsoft Azure** for data transformations, automating workflows, data visualization, scaling on the cloud, and distributed systems

Software Engineer - Android Embedded Developer

June 2022 – Feb 2023

- Developed embedded vehicle camera software using **C++** to automate displaying error views when errors occur
- Optimized vehicle cluster test application to provide a comprehensive simulation of camera views
- Tested on in-vehicle displays and hardware to simulate customer experience and identify/resolve **software defects**
- Fixed over **100 Parasoft** violations, resulting in cleaner and more robust code

Software Integration Engineer - Software Features Integration

February 2022 – June 2022

- Tested Access and Security features in various vehicle programs accounting for every potential user case
- Root caused Diagnostic Trouble Codes that arise after testing by understanding the software architecture
- Created technical documentation and opened change requests to present to stakeholders

Project Engineer - Seat Components

June 2021 – February 2022

- Designed a parameterized snap in NX that automatically generates an optimal design given user desired parameters
- Created a Design for Six Sigma design process and compiled a catalog of potential product designs

## Projects

### Tweet Sentiment Analyzer

April 2024 – May 2024

- Created a sentiment analysis tool that determines the sentiment of text using multiple **NLP machine learning** models
- Implemented Logistic Regression, Bernoulli Naive-Bayes, and kNN algorithms for a binary label classification
- Preprocessed data to filter out non value added characters and optimized results using a **TF-IDF** vectorizer
- Fine-tuned models' hyperparameters using **GridSearchCV**, achieving highest accuracy of **80%**

### GearOnTheGo

Sep 2023 – Oct 2023

- Created a **CRUD** equipment rental web app using **Flask** and **React**, allowing the user to both host and rent equipment
- Led the User Login, Registration, and Security features implementation for backend development all within a clean **UI**
- Implemented unit and automated tests using **Selenium** achieving **100%** of code coverage
- Utilized **PostgreSQL** hosted on **ElephantSQL** as a database to store information on items, users, and reservations

### OnTrack

Aug 2022 – Aug 2022

- Created a To Do app using **Android Studio** and **Kotlin**, designing for **UX** by providing a color based priority for each task, a clean **UI**, and incorporated various functionality such as switching color themes
- Leveraged **Room Storage** database to locally store tasks that follow **CRUD** functionality and can be marked complete

## Leadership Experience

### Team Lead, Terrier Motorsport

Mar 2020 - May 2021

- Designed undertray and bodywork for a Formula Hybrid electric vehicle and **managed** subteam members