

# Muhammad Bilal

774-707-1041 | [muhammadbil27@gmail.com](mailto:muhammadbil27@gmail.com) | <https://www.linkedin.com/in/muhammad-bilal-221609231>  
<https://github.com/mbila227>

## EDUCATION

### University of Massachusetts Amherst

Bachelor of Science in Computer Science

GPA – 3.63/4.00

Expected Graduation: May 2026

### Courses

Intro to CS, Object-Orientated Programming, Data Structures and Algorithms, Calculus 1, Calculus 2

## EXPERIENCE

### Software Engineer Fellow

Headstarter AI - Artificial Intelligence Company

July 2024 – August 2024

Remote

- Built 5 AI apps and APIs using Next.JS, OpenAI, Pinecone, StripeAPI with 98% accuracy as seen by 1000 users
- Developed projects from design to deployment leading 4+ engineering fellows using MVC design patterns
- Coached by Amazon, Bloomberg and Capital One engineers on Agile, CI/CD, Git and microservice patterns
- Built a final project aimed at raising over \$1000

### Software Engineer Intern

Edworldo - Education Tech Startup

June 2023 – August 2023

Austin, TX

- Built a prototype question generator that crafts questions similar to the STARR test
- Leveraged advanced machine learning models to train the data used for the prototype
- Error handled and made API calls between the front and back end

### Machine Learning Intern

Persivia Inc- Healthcare IT Company

June 2021 – August 2021

Marlborough, MA

- Leveraged machine learning models utilizing Python to predict costs of patients
- Leveraged Numpy to predict costs based on age, condition, and risk level of disease
- Utilized Java to create user interface that displays machine learning models

## PROJECTS

### Chef Krrish Chatbot | React.js, Next.js, Firebase, Tailwind CSS, OpenRouter API

Aug 2024 – Aug 2024

- Developed a web application that integrates Firebase Authentication, Firestore, and the OpenRouter API to deliver a personalized chatbot experience focused on dietary and nutritional guidance.
- Designed and implemented the frontend using React and Next.js, ensuring a responsive and user-friendly interface. Integrated Firebase Authentication for secure user sign-up and login with Google or email, and managed user data with Firestore.
- Implemented a user preferences system, allowing customization of dietary restrictions, allergies, and health goals. Enabled chat history functionality, allowing users to view and manage their previous interactions. Added dark mode functionality, enhancing the user experience by allowing them to toggle between light and dark themes.

### A.I Personal Assistant | Python, OpenAI, gTTS, pyaudio, playsound

Dec 2023 – Jan 2024

- Developed a voice-activated assistant using Python with modules such as pyaudio, playsound, gTTS, and OpenAI.
- Integrated OpenAI's GPT-3.5-turbo model to process and respond to user voice commands.
- Utilized the Google Text-to-Speech (gTTS) library to convert AI-generated text responses into audio.

### Quiz Maker | Python, Jupyter Notebook, OpenAI, Gradio, ipywidgets

May 2023 – June 2023

- Utilized Jupyter Notebook to train machine learning model that responds with questions based on given information.
- Implemented OpenAI's API to create plethora of questions ranging from math to general knowledge.
- Finetuned the machine learning model using OpenAI in attempt of scaling the application to schools.

## TECHNICAL SKILLS

**Languages:** Java, Python, C, SQL, JavaScript, HTML/CSS

**Frameworks:** React, Node.js, Spring, Bootstrap

**Developer Tools:** Eclipse, VScode, Linux, Windows

**Libraries:** pandas, NumPy, Matplotlib