

# Ibeagha Bethel Emmanuel

[ibeaghaemmanuel@gmail.com](mailto:ibeaghaemmanuel@gmail.com) | <https://bethel1889.github.io/pandora/> | [www.linkedin.com/in/bethel1889](https://www.linkedin.com/in/bethel1889)

## WORK EXPERIENCE

### TT Consulting Services Ltd

**Birmingham, UK**

*Backend and Automation Developer*

*Sep 2024 - Jan 2025*

- Developed and maintained backend APIs using Flask and FastAPI for AI-driven automation projects, improving system efficiency by 15%.
- Designed and implemented "Vigilia," a vanilla Python script utilizing Selenium to automate embassy appointment booking by monitoring portals, reducing manual effort by 70% and increasing booking success rates.
- Created a Python script to automate downloading, parsing, and organizing Google Form responses into client folders, enhancing data management efficiency.
- Implemented user notification features via email for successful appointment scheduling and status updates.
- Ensured secure API integration with external services, handling user authentication and data encryption to maintain high data security standards.

### HI-TECH SSSP

**Benue, Nigeria**

*Mobile Device Repair Technician*

*May 2020 - Jan 2022*

- Diagnosed and repaired complex hardware and software issues across various mobile devices, achieving a 95% customer satisfaction rate.
- Streamlined repair processes by implementing standardized diagnostic procedures, reducing average repair time by 20%.
- Managed inventory and parts ordering, ensuring timely availability and reducing repair delays by 98%.

## EDUCATION

### Harvard University (HarvardX - Online)

**Cambridge, MA**

*CS50x: Introduction to Computer Science*

*CS50P: Introduction to Programming with Python*

*CS50W: Web Programming with Python and JavaScript(In Progress)*

*CS50AI: Introduction to Artificial Intelligence with Python(In Progress)*

### University of Michigan (Coursera Online)

*Python for Everybody Specialization*

## PROJECT EXPERIENCE

### Njem: Enugu BRT System

**Enugu Tech Fest Hackathon Project**

*Project Lead*

- Led the project team in developing a Django-based web application simulating a Bus Rapid Transit (BRT) system for Enugu, featuring route planning, ticketing, and admin oversight during the hackathon.
- Implemented optimal route finding using BFS (minimum stops) and Dijkstra's algorithm (minimum transfers).
- Integrated Leaflet.js and OpenStreetMap for interactive map visualization of routes and stops.
- Utilized SciPy's KD-Tree for efficient nearest bus stop location based on user geolocation.
- Incorporated Paystack API for digital ticket purchasing and management, including QR code generation and verification logic.

### AutoAid

**Innovate to Impact Hackathon, Coal City University**

*Development Team Lead*

- Led the development team for a Flask application connecting car owners with mechanics, facilitating service discovery and issue reporting.

- Guided the team to achieve 1st Place at the hackathon, recognized for technical excellence, innovation, and impact potential.
- Features location-based mechanic search, detailed issue reporting forms, user/mechanic profiles, and admin management tools.

### **EventLink**

### **Google DevFest 2024 Speaker Session**

#### *Creator*

- Created a Flask web application to enhance event networking, allowing users to join event rooms and connect via LinkedIn profiles.
- Showcased as a practical example during an invited talk on "Data-Driven Software Architecture Design" at Google DevFest 2024.
- Includes secure room access, attendee profile browsing, and admin features for user role and room status management.

### **Njem Backend**

### **API for Inter-City Transport Expansion**

#### *Backend Developer*

- Developed the backend API using Django REST Framework for a transport booking platform, enabling the scaling of the Njem concept to inter-city travel.
- Designed and implemented core API endpoints for searching trips (by location, time), viewing available seats, and creating preliminary bookings (PoC stage).
- Included database seeding scripts for managing initial application data (terminals, routes, vehicles, sample trips).

### **Commerce**

### **Harvard CS50W Project**

#### *Developer*

- Built a Django-based e-commerce auction site allowing users to create listings, place bids, manage watchlists, and add comments.
- Implemented user authentication, database modeling for listings/bids/comments, and dynamic frontend updates.

### **Maple Match**

### **Harvard CS50X Capstone Project**

#### *Developer*

- Developed a Flask-based web application to streamline job searches for foreign workers seeking LMIA-approved positions in Canada.
- Features a robust SQLite database (>18,000 listings), user authentication, search/filtering, and secure session management.

### **Clip Vault**

### **Harvard CS50P Capstone Project**

#### *Developer*

- Built a lightweight, cross-platform clipboard history manager using Python and Tkinter.
- Features efficient tracking, management (delete/copy), customisation (font, history size, theme), and an intuitive user interface.

## **LEADERSHIP EXPERIENCE**

### **Google DevFest 2024**

### **Enugu, Nigeria**

#### *Invited Speaker*

- Presented session titled: "Data-Driven Software Architecture Design", showcasing the EventLink project as a case study.

### **Innovate to Impact Hackathon**

### **Coal City University**

#### *Hackathon Winner (1st Place) & Team Lead*

- Led the development team for the winning project, AutoAid, demonstrating leadership and technical execution under pressure.

### **Enugu Tech Fest Hackathon**

#### *Hackathon Team Lead*

- Led the team developing the Njem BRT simulation project, coordinating efforts and ensuring project milestones were met during the event.

## **SKILLS**

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- Skills:**
- Programming & Core Concepts: Python (Expert), JavaScript, SQL, Object-Oriented Programming (OOP), Data Structures & Algorithms
  - Web Development: Django, Flask, RESTful API Design & Development, HTML5, CSS3, Frontend Frameworks (Bootstrap, Tailwind)
  - Automation & Tools: Selenium, Git, GitHub, Linux Environment;
  - Databases: Relational Databases (SQLite, SQL), Database Design;
  - Leadership & Soft Skills: Team Leadership, Technical Mentoring, Communication, Problem-Solving, Adaptability
  - Languages: English: C1 (IELTS Academic: 8.0), German: A1 Certified, French: A2 (DELF)