

## **MOHAMMED ZAIN**

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## **PROFESSIONAL SUMMARY**

B.E. Student (2026) specializing in building data-driven solutions with Python. Hands-on experience in full-stack application development, data analysis, and applied AI. Key projects include a Flask-based web app with REST APIs, a secure MySQL database application, and an NLU framework integrating the Google Gemini API. Eager to secure a full-time opportunity in a data-centric or software engineering role starting in 2026.

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## **EDUCATION**

### **Bachelor of Engineering in Artificial Intelligence and Machine Learning (CGPA: 8.0/10.0)**

The Oxford College of Engineering, Bengaluru, Karnataka

Graduation Date: 06/2026

### **Pre University (12th) (Percentage: 90%)**

Mountain View PU College, Chikkamagaluru, Karnataka

05/2021 - 06/2022

### **School (10th) (Percentage: 92%)**

J V S English High School, Chikkamagaluru, Karnataka

05/2019 - 08/2020

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## **TECHNICAL SKILLS**

- **Languages:** Python, SQL
- **Python Libraries & Frameworks:**
  - **AI/ML & Data:** Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, NLTK
  - **Web & Backend:** Flask, REST APIs, Flask-SQLAlchemy
- **Databases:** MySQL, SQLite
- **Developer Tools:** Git, GitHub, Docker, Jupyter Notebook
- **Core Concepts:** Object-Oriented Programming (OOP), Data Structures & Algorithms (DSA), Database Management, Natural Language Understanding (NLU)

## PROJECTS

### Speech-Driven NLU Framework for Data Analytics | 10/2025

- **Developed** a full-stack, voice-driven web app using **Python** and **Flask** to serve a **REST API**; built the **HTML/CSS** frontend and integrated **gTTS (Text-to-Speech)** for a complete voice-in, voice-out user experience.
- **Engineered** a robust "**Two-Prompt Disentangled Pipeline**" using the **Google Gemini API**; the first prompt accurately generated **Pandas** code, and the second formatted the computed result, preventing AI hallucinations.
- **Implemented** a full-featured admin role with a private dashboard, leveraging **Flask-SQLAlchemy** and **SQLite** to log all user interactions and display system analytics (e.g., total queries, most active user).
- **Validated** the system's reliability by creating an **automated Python evaluation script** to test the AI's code generation against a **50-question benchmark**, achieving **96% accuracy**.

### Secure Python Password Vault | 10/2025

- Developed a secure **Python** password manager with a **MySQL** backend, performing full **CRUD** operations.
- Implemented **SHA-256** hashing for master password verification and **Fernet (AES-128)** encryption for all credentials.
- Built a strong, **customizable password generator** with user options for numbers and special characters.
- Utilized **Git/GitHub** for version control and libraries including **mysql-connector-python** and **cryptography**

### Personalized Text-to-Handwriting Generator | 10/2025

- Developed a **Python** script to convert text into a high-resolution PNG image that simulates **my personal handwriting**.
- **Digitized my own handwriting** by creating a custom character set from scans of individual letters, replacing the need for generic .ttf fonts.
- Engineered a custom rendering engine using **Pillow (PIL)** to precisely control word spacing, line height, and automatic text wrapping.
- Managed the project with **Git/GitHub** for version control and maintained dependencies using **venv**.

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## CERTIFICATIONS

- **Python Full Course (Beginner to Advanced)** – GeeksforGeeks | 8/2025
- **SQL Basic** – HackerRank | 8/2025
- **Cloud Computing Fundamentals** – IBM | 8/2025