

# VISNU SINGH

Backend Developer | Python • Node.js • APIs • Databases

[+44 7587442046](#) | [visnusingh370@gmail.com](mailto:visnusingh370@gmail.com) | [Portfolio](#) | [LinkedIn](#) | [GitHub](#)

## SUMMARY

Backend-focused Software Engineer with hands-on experience designing REST APIs, building data-driven applications, and deploying real-time systems using Python, Node.js/Express, MySQL, and cloud services (AWS EC2, S3, Lambda). Strong foundation in data processing, backend architecture, authentication, and Linux environments. Delivered scalable systems across education platforms, automation tools, and security applications. Seeking to contribute to backend development and data engineering challenges in a fintech environment.

## SKILLS

- **Backend Development:** Python, Node.js, Express.js, Flask.
- **Databases:** MySQL, SQLite, MongoDB (basic), Firebase Realtime Database.
- **API Design:** REST APIs, JWT Authentication, Multer file handling.
- **Systems & Infrastructure:** Linux (Ubuntu), AWS (EC2, S3, Lambda), CI/CD (GitHub Actions).
- **Data & Processing:** NumPy, Pandas, Speech Recognition, OpenCV.
- **Web:** HTML5, CSS3, JavaScript.
- **Tools:** Git, Nginx (basic), PyAudio, pyttsx3.
- **Other:** Debugging, performance optimization, real-time streaming.

## EXPERIENCE

### Backend Developer – Online Learning Platform [[GitHub](#)]

11/2024 - 05/2025

Node.js, Express, MySQL, Multer, JWT, HTML, CSS, JS

- Built backend APIs in Node.js/Express enabling professors to upload/manage lectures and students to browse/search content.
- Implemented JWT authentication with role-based access control, reducing unauthorized access by 30%.
- Designed relational schema in MySQL for users, courses, and lectures; optimized queries with indexing and improved page load times by 25%.
- Developed a secure upload pipeline using Multer, storing video references and metadata efficiently.
- Added server-side validation, error handling, and optimized API responses for scalability.

### Python Developer – Voice Recognition System [[GitHub](#)]

01/2025 - 05/2025

Python, Speech Recognition, PyAudio, pyttsx3

- Built a command-driven voice assistant using Speech Recognition and PyAudio for live audio capture.
- Integrated offline text-to-speech using pyttsx3 and added natural command parsing.
- Improved recognition accuracy by 40% through noise filtering, threshold tuning, and ignoring short-duration noise.
- Added wake-word detection and confidence-based execution to handle noisy environments reliably.

### Backend/Python Developer – Smart Security Camera [[GitHub](#)]

09/2024 - 12/2024

Python, OpenCV, NumPy, Flask, AWS EC2, SQLite

- Built a real-time motion detection backend using OpenCV, achieving 92% detection accuracy through frame differencing and noise reduction.
- Implemented live video streaming using Flask with multipart/x-mixed-replace, delivering 30 FPS with <200 ms latency.
- Deployed the system on AWS EC2, configuring the Linux environment for low-latency performance and stable streaming.
- Designed a lightweight incident logging system using SQLite to store events with timestamps and metadata.
- Created a Flask dashboard for viewing live feeds and reviewing recorded incidents, improving response time by 40%.

## EDUCATION

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#### Bachelor of Science; Major in Computer Science – University of Northampton

09/2024 - 05/2025

- Relevant Modules: Artificial Intelligence, Machine Learning, Media Technology, Cyber Security, Cryptography, Modern Databases.

#### Bachelor of Science; Major in Computer Science – Assumption University

05/2021 - 03/2024

- Relevant Modules: Object-Oriented Programming, Data Science, C, Python, Data structure & Algorithms, Cloud Computing.

## CERTIFICATIONS

- Web site by Word Press [[View Credential](#)]

02/2024

- AWS Academy Cloud Foundations [[View Credential](#)]

02/2024