

KUNJ GUPTA

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Experience

Syntalix | [[Letter of Recommendation](#)]
Backend Lead

Remote
Mar 2023 - Dec 2024

- Engineered scalable backend **microservices**, including **real-time data processing**, **caching mechanisms**, and third-party API integrations, using **distributed systems** architecture, ensuring high scalability and performance, with **99.9% uptime**.
- Spearheaded key backend features for an **e-commerce** platform using **MERN** stack, improving API response time by **40%**.
- Led a team of 2** and executed Google Ads campaign for a client, adapting strategies to boost **ROI by 35%** over several months.
- Languages and Libraries: MERN, Fastify, NestJS, Postgres, Redis, RabbitMQ, Stripe, Flask, Cloudinary, Firebase, TypeScript.

IEM Research Cell
Junior Researcher

Kolkata, India
Dec 2022 - Sep 2023

- Designed a **MERN** server for **real-time data processing** and integration with **drone** systems & **deep learning** algorithms, trained to identify **20+ animal species**, automating detection of **deforestation**, **poaching**, **forest fires** & **wildlife monitoring**.
- Reduced **operational costs** by up to **15%** and **manual intervention** by **80%** compared to traditional surveillance methods by reducing the reliance on fixed cameras that deteriorate over time.
- Filed a **patent**, secured **victories** in **3+** project exhibitions, learned microcontroller coding and basics of drone building.
- Languages and Libraries: MERN, Arduino, ESP32.

Education

Bachelor of Technology (B.Tech) - Computer Science and Engineering (Artificial Intelligence)
Institute of Engineering & Management, Salt Lake, Kolkata, India

2022 - 26
CGPA: 9.32

Projects

BitsnBite

[Website](#) | [GitHub](#) | Nov 2024

- Orchestrated a **food delivery app**, implementing user authentication, cart management, order history, drafts, & profile updates.
- Implemented **payment** page features with **PayPal** integration & **OpenStreetMap**, improving location tracking accuracy by **15%**.
- Languages and Libraries: Node, JavaScript, React, Express, Cloudinary, MongoDB, Mailgun, PayPal SDK.

KawniX Flow

[Website](#) | Aug 2024

- Developed an interactive **flowchart tool** with drag-and-drop UI and **information retrieval**-based prompt-to-structure generation, optimized for up to **100 nodes** with sub-second response times, reducing **diagram creation time** by **42%**.
- Languages and Libraries: React, JavaScript, OpenAI API, React Flow, React DnD, Tailwind CSS.

PiGuard

[Demo](#) | [GitHub](#) | Feb 2024

- Designed a **Raspberry Pi**-based facial recognition door lock system integrating deep learning algorithms with **96.5% accuracy**.
- Enabled real-time communication with owner via **SMS alerts** and **OTP verification** for unrecognized faces sent **within 2 seconds**.
- Languages and Libraries: Debian-based Bookworm OS, Python, DeepFace, OpenCV, NumPy, Twilio, Miniforge.

The Continental

[GitHub](#) | Oct 2020

- Architected a Tkinter-based **Bank Management System**, featuring **20+ functions** including credit & debit card processing, captcha generation, email notifications, & comprehensive database management - optimizing **SQL query performance** by **35%**.
- Languages and Libraries: Python, MySQL, yagmail, PIL, tkinter.

Patents and Publications

J=JOURNAL, P=PATENT

- [P.1] Kunj Gupta, et al. (2023). **Aerial Forest Ranger**. Indian Patent Office, Patent No. 202331066476. Status: RQ Filed.
- [J.1] Arkaprabha De, Kunj Gupta, et al. (2023). **Poseidon: Surface Water Garbage Collector**. *International Journal of Innovative Research in Physics*, Vol. 4, Issue 2, pp. 27-31. DOI: 10.15864/ijrip.4205.

Achievements

- Secured a **Finalist** position in the **YUKTI** (MoE) Innovation Challenge 2023, ranking among the **Top 100** startup ideas in India.
- Achieved **Global ranks 389** and **521** in the **CodeChef** Starters 153 and 179, respectively. [[CodeChef Profile](#)]
- Placed **2nd nationally** for the **Young Engineer's Award 2023** issued by Institution of Engineering and Technology (**IET**).
- Qualified PRMO 2019** - Maths Olympiad Organized by HBCSE and MTA; ranked among the **Top 300** from my region.
- Won** multiple coding contests and tech-fest exhibitions, outperforming **800+** participants.

Skills

Languages: C/C++, Python, Java, JavaScript, HTML, CSS

Tools & Frameworks: Git/GitHub, NodeJS, ExpressJS, NestJS, Fastify, REST, Flask, FastAPI, Agile

Databases: MongoDB, PostgreSQL, Redis, MySQL

Cloud Services: Render, Firebase, Cloudinary, Twilio, Mailgun, Google Cloud

Operating Systems: Microsoft Windows, Unix/Linux - Ubuntu, Kali, Bookworm (Debian)

Relevant Coursework: DSA, System Design, Operating Systems, OOP, DBMS, COA, AIML, Cloud Computing, Computer Networks (TCP/IP), MATLAB, Natural Language Processing, Cyber Security

Extracurricular

- Technical Blog:** 'Printf/Cout in C/C++ GCC: Decoding the Confusing Outputs'. [[Medium](#)]
- Completed an intensive **30-day** long hands-on workshop on **Cloud Computing** and **Generative AI** by **Google**. [[Certificate](#)]
- Competed in **5+** competitive coding contests hosted by **IIT Kharagpur** and **TCS Codevita** (Round 2).
- Won various accolades in Table Tennis (District-level), Basketball and Swimming (10+ years).