KUNJ GUPTA

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Experience

Goldman Sachs — Bengaluru, India
Summer Analyst — **May 2025 - Present**

- Migrating a **10000+ LOC** **legacy backend** from **SLang** (proprietary) to **Java** in the **Client Hub Engineering** team using **Agile** methodologies, integrating **ElasticSearch** for scalable, performant, and maintainable data search and analytics.

Syntalix | [*Letter of Recommendation*] — Remote
Backend Lead — **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.
- Tech Stack: MERN, Fastify, NestJS, Postgres, Redis, RabbitMQ, Stripe, Flask, Cloudinary, Firebase, TypeScript.

IEM Research Cell — Kolkata, India
Junior Researcher — **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.
- Authored a **patent**, won **3+** project exhibitions, gained experience with microcontroller programming and drone prototyping.

Education

Bachelor of Technology (B.Tech) - Computer Science and Engineering (Artificial Intelligence) — *2022 - 26*
Institute of Engineering & Management, Salt Lake, Kolkata, India — **CGPA: 9.32**

Projects

AgentVerse — *Website* | *GitHub* | *Apr 2025*

- Spearheaded a **distributed, multi-tiered AI system** using asynchronous **FastAPI** and orchestration of **4+ specialized agents**, enabling real-time insights via a conversational bot, cutting **manual analysis** by **64%** and boosting **risk accuracy** by **25%**.
- Directed a responsive **Streamlit** frontend with project creation, **historical chat retrieval**, and interactive dashboards visualizing **KPIs** like health score, risk breakdown, and timelines, accelerating **project evaluation** by **35%**.
- Tech Stack: FastAPI, Python, MongoDB, Streamlit, Gemini, Plotly, Pandas, Pydantic, yfinance, NewsAPI

BitsnBite — *Website* | *GitHub* | *Nov 2024*

- Orchestrated a **food delivery app**, implementing **20+ features** like user auth, cart, order history, drafts, & profile updates.
- Implemented **payment** page features with **PayPal** integration & **OpenStreetMap**, improving location tracking accuracy by **15%**.
- Tech Stack: Node, JavaScript, React, Express, Cloudinary, MongoDB, Mailgun, PayPal SDK.

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**.
- Tech Stack: Debian-based Bookworm OS, Python, DeepFace, OpenCV, NumPy, Twilio, Miniforge.

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/ijiip.4205.

Achievements

- Secured a SWE Internship at **Goldman Sachs**, selected among the **top 50** candidates from over **1,00,000+** applicants (off-campus).
- Earned 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, TypeScript, HTML, CSS, SLang (Goldman Sachs)
Tools & Frameworks: Git/GitHub, ElasticSearch, NodeJS, ExpressJS, NestJS, Fastify, REST, Flask, FastAPI, Agile, Kibana
Databases: MongoDB, Redis, Relational - PostgreSQL, MySQL
Cloud Services: Amazon Web Services (AWS), Render, Firebase, Cloudinary, Twilio, Mailgun, Google Cloud
Operating Systems: Microsoft Windows, Unix/Linux - Ubuntu, Kali, Bookworm (Debian)
Relevant Coursework: DSA, System Design, OS, Object Oriented Programming, DBMS, COA, AIML, NLP, Cloud Computing, Computer Networks (TCP/IP), MATLAB, Cyber Security, Complexity Analysis

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).
- Earned various accolades in Table Tennis (District-level), Basketball and Swimming (10+ years).