Kunj Gupta

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Experience

Syntalix | Backend Lead — *Mar 2023 - Dec 2024*
Product Startup and Consultancy — [Website]
- Engineered scalable backend **microservices**, including **real-time data processing, caching mechanisms**, and third-party API integrations, ensuring high scalability and performance, with **99.9% uptime**.
- Spearheaded key backend features for an **e-commerce** platform in **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 IEDC | Junior Researcher — *Dec 2022 - Sept 2023*
Research and Development lab of IEM, Kolkata — [Website]
- Designed a **MERN** server to support **real-time data processing** and integration with **drone** systems & **deep learning** algorithms for Aerial Forest Ranger project, 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** and won **3+** project exhibitions, and learnt microcontroller coding and basics of drone building.
- Languages and Libraries: MERN, Arduino, Esp32.

Education

B.Tech - Computer Science and Engineering (Artificial Intelligence) — *2022-26(exp.)*
Institute of Engineering and Management, SaltLake, Kolkata, India — **CGPA: 9.30**

AISSCE - PCM with Computer Science (Senior Secondary) — *2019-21*
Delhi Public School, Ruby Park, Kolkata, India — **93.2%**

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** for visualizing code structures with drag-and-drop functionality, optimized to handle complex flowcharts up to **100 nodes** while maintaining 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.**
- Real-time communication with the 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**, enhancing **data retrieval speed** by **35%** with refined SQL queries.
- 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] 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

- **YUKTI** (MoE) Innovation Challenge **2023 Finalist**. Ranked among the **Top 100** startup ideas in India.
- **Global rank 389** in the Codechef Starters 153, 2024
- **Qualified PRMO 2019** - Maths Olympiad Organized by HBCSE and MTA. Ranked among the **top 300** from my region.
- **Winner** of multiple coding contests and exhibitions of Tech-fests - **800+** participants.

Skills

Languages: C/C++, Python, Java, JavaScript, HTML, CSS
Tools & Frameworks: Git/Github, NodeJS, ExpressJS, NestJS, Fastify, REST, Flask, Agile
Databases: MongoDB, PostgreSQL, Redis, MySQL
Cloud Services: Render, Firebase, Cloudinary, Twilio, Mailgun, Google Cloud
Operating Systems: Microsoft Windows, Linux - Ubuntu, Bookworm (Debian)
Relevant Coursework: Data Structures & Algorithms, System Design, Operating Systems, Object Oriented Programming, Database Management System, Computer Organization & Architecture, Artificial Intelligence & Machine Learning, MATLAB
Soft Skills: Leadership, Analytical Reasoning, Self-learning, Presentation, Communication, Teamwork, Collaboration

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**.
- Participated in **5+** competitive coding competitions conducted by **IIT Kharagpur** and **TCS**.
- Won various accolades in Table Tennis (District-level), Basketball and Swimming (10+ years).