KUNJ GUPTA

Backend Web Developer
Third Year Undergraduate
Computer Science and Engineering

+91-6290679821
kunj7dgupta@gmail.com
CodeForces CodeChef
Github LinkedIn

Experience

Syntalix | Co-Founder and Backend Lead — *Mar 2023 - Present*
AI Startup and Consultancy — [Website]

- Developed an API for Optical Character Recognition (OCR) improving **data extraction accuracy** by 20%.
- Built a web scraper to automate extraction of **500+ financial news** daily, saving **15+ hours of manual work** weekly.
- Developed a real-time video processing app to **identify card decks during gameplay**, able to process 30 fps.
- **Led a team of 2** and executed Google Ads campaign for a client, thereby increasing **ROI by 35%** over several months.
- Integrated OpenAI and Microsoft's Taskweaver into a React-based application, streamlining complex workflows.
- Designed and implemented key backend features for an **e-commerce** platform using **NodeJS, ExpressJs**, **MongoDB**.

IEM IEDC | Junior Researcher — *Dec 2022 - Sept 2023*
Research and Development lab of IEM, Kolkata — [Website]

- Implemented a Machine Learning (ML) model using **Convolutional Neural Networks** (CNN) to automate detection of **deforestation, poaching, forest fire** and **monitor animals** using drone camera - Aerial Forest Ranger.
- 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.
- Learnt microcontroller coding and basics of drone building.
- Languages and Libraries: Python, TensorFlow, OpenCV, Keras, PIL, Pandas, 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 (Standard 12) — *2019-21*
Delhi Public School, Ruby Park, Kolkata, India — 93.2%

ICSE - Science with Computer Applications (Standard 10) — *2019*
Welland Gouldsmith School, Patuli, Kolkata, India — 96.2%

Projects

KawniX Flow — *Website* | *Github* | *Aug 2024*

- Developed an interactive **flowchart creation tool** for visualizing code structures, featuring drag-and-drop functionality for real-time node placement, reducing **diagram creation time by 42%.**
- Integrated OpenAI for generating code snippets from user prompts & uploaded files, reducing **coding time by 30%.**
- Combined code snippets are shown in a preview area, allowing users to review and download in their preferred file format, supporting **8** different programming language formats.
- Optimized performance to handle complex flowcharts up to **100 nodes** while maintaining sub-second response times.
- Languages and Libraries: React, JavaScript, OpenAI API, React Flow, React DnD, Tailwind CSS, Lucide React.

VidStream — *Github* | *Mar 2024*

- Built a **YouTube clone backend**, implementing user authentication, video management, and comment functionality.
- Ensured secure user data handling with **bcryptjs** & **JSON Web Tokens** for authentication with **latency under 100ms**.
- Languages and Libraries: JavaScript, BcryptJs, Cookie-Parser, Express, JsonWebToken, Mongoose, Nodemon.

PiGuard — *Github* | *Feb 2024*

- Developed a **Raspberry Pi**-based facial recognition door lock system integrating deep learning for secure access.
- Real-time communication via **SMS alerts**(owner) and **OTP verification** for unrecognized faces sent **within 2 seconds**.
- Reduced **false positives by 85%** by optimizing the deep learning algorithm.
- Languages and Libraries: Debian-based Bookworm OS, Python, DeepFace, OpenCV, Twilio, Miniforge Anaconda.

The Continental — *Github* | *Oct 2020*

- Developed a tkinter application which simulates a real life **Bank Management System** as a school project.
- Implemented features such as Human Verification (using Captcha), Email Verification and Database Management.
- 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, awaiting publication.

[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** Innovation Challenge **2023 Finalist**. Ranked among the **Top 100** startup ideas in India.
- **Global rank 389** in the Codechef Starters 153, 2024
- **Winner** of multiple coding contests and exhibitions of Tech-fests - **SMF'23, CodeBreak Odyssey'23, Elevate'24**
- **Qualified PRMO 2019** - Maths Olympiad Organized by HBCSE and MTA

Skills

Languages: C/C++, Python, Java, JavaScript, Typescript, HTML, CSS
Frameworks: NodeJS, ExpressJS, NestJS, Flask, REST APIs, Agile development methodology
Databases: MongoDB, MySQL, PostgreSQL
Cloud Services: Google Cloud Platform (GCP), Firebase, Render, Twilio, Mailgun
Libraries & Tools: Git/Github, JsonWebToken, BcryptJs, Cookie-Parser, OpenCV, Pandas, Keras, NumPy
Operating Systems: Microsoft Windows, Linux - Ubuntu, Bookworm (Debian)
Relevent Coursework: Data Structures & Algorithms, Operating Systems, Object Oriented Programming, Database Management System, Computer Organization & Architecture, Artificial Intelligence & Machine Learning, MATLAB
Soft Skills: Problem Solving, Self-learning, Presentation, Adaptability, Communication

Extracurricular

- Attended a month long hands-on workshop on **Cloud Computing** and **Generative AI** by **Google**.
- Participated in various coding competitions conducted by **IIT Kharagpur** and **TCS**.
- Gained early proficiency in mental arithmetic through **abacus** training.
- Enthusiastic about sports and won various accolades in Table Tennis (District-level), Basketball and Swimming.