KUNJ GUPTA

Backend Web Developer
Third Year Undergraduate
Computer Science and Engineering

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EXPERIENCE

Syntalix | Co-Founder and Backend Lead   *March 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 frames per second.
- **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** and **MongoDB**.

IEM IEDC | Junior Researcher   *December 2022 - September 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

PROJECTS

VidStream   *Github* | *March 2024*
- Built a **YouTube clone backend**, implementing user authentication, video management, and comment functionality.
- Ensured secure user data handling with **bcryptjs** and **JSON Web Tokens** for authentication with **latency under 100ms**.
- Languages and Libraries: JavaScript, BcryptJs, Cookie-Parser, dotenv, Express, JsonWebToken, Mongoose, Nodemon.

PiGuard   *Github* | *February 2024*
- Developed a **Raspberry Pi**-based facial recognition door lock system integrating deep learning algorithms for secure access.
- Real-time communication with the owner via **SMS alerts** 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, NumPy, Twilio, Miniforge Anaconda.

The Continental   *Github* | *October 2022*
- Developed an application which simulates a real life **Bank Management System**.
- Implemented features such as Human Verification (using Captcha), Email Verification and Database Management.
- Languages and Libraries: Python, SQL, 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 500** startup ideas in India.
- **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, MATLAB, HTML, CSS, JavaScript, Typescript
Libraries & Tools: Git, Twilio, Render, Mailgun, JsonWebToken, BcryptJs, Cookie-Parser, OpenCV, Pandas, Keras, NumPy
Databases: MySQL, PostgreSQL, MongoDB
Frameworks: NodeJS, ExpressJS, NestJS, Flask, REST APIs, Google Cloud Platform (GCP), Agile Methodology
Operating Systems: Microsoft Windows, Linux - Ubuntu, Bookworm (Debian)
Relevent Coursework: Data Structures & Algorithms, Operating Systems, Object Oriented Programming, Database Management System, Computer Organization and Architecture
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.