

# KUNJ GUPTA

Backend Web Developer  
Third Year Undergraduate  
Computer Science and Engineering

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📊 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 (Senior Secondary)

2019-21

Delhi Public School, Ruby Park, Kolkata, India

93.2%

### ICSE - Science with Computer Applications (Secondary)

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

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- **YUKTI** (MoE) 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

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**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)

**Relevant 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

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- 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.