

# ARYAN KAFLE

Computer Engineering Student | AI & Full-Stack Developer  
Kathmandu, Nepal

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## Professional Summary

Computer Engineering student with strong interest in Artificial Intelligence, Machine Learning, and Full-Stack Development. Experienced in building AI-powered web applications using Django, Next.js, and Hugging Face models. Focused on practical system design, deployment, and optimization of real-world solutions.

## Technical Skills

### 1. Programming Languages:

Python, JavaScript, C, C++, SQL

### 2. Frontend:

React, Next.js, Redux, HTML, CSS

### 3. Backend:

Django, Django REST Framework, Node.js, Express

### 4. AI / Machine Learning:

PyTorch, Reinforcement Learning (PPO), Hugging Face Transformers, Semantic Similarity Models

### 5. Databases:

SQLite, SQL

### 6. Tools & DevOps:

Git, GitHub Actions, Docker (basic), Cloudflare DNS, Custom Domain Deployment

## Projects

### 1. AI-Based Handwritten Answer Grading System

- Built using Django + Hugging Face Transformers.
- Extracts handwritten text from images.
- Grades answers using semantic similarity models.
- Designed REST APIs with Django REST Framework.
- Frontend built using Next.js.

### 2. Satellite Attitude Control using Reinforcement Learning

- Implemented PPO (Proximal Policy Optimization) for attitude stabilization.
- Used GNSS datasets (.SP3, .OBX from TUGraz repository).
- Focused on control optimization and model evaluation benchmarks.

### 3. Student Support Platform (Class 10 Focused)

- Backend: Django + SQLite
- Frontend: Next.js
- Created a curriculum-based structured support system.
- Designed scalable REST API architecture.

### 4. Full-Stack Portfolio Website

- Deployed using a custom domain.
- Configured DNS and GitHub deployment workflows.
- Integrated interactive UI components.

### 5. Automated GitHub Workflow System

- Designed GitHub Actions for auto issue labeling and deadline warnings.
- Integrated automated PR validation checks.
- Implemented branch protection and workflow automation.

### 6. Interactive Game Application (Pygame)

- Developed an interactive 2D game using Python and Pygame.
- Implemented real-time event handling, collision detection, and state management.
- Designed game loop architecture with optimized rendering cycle.
- Structured modular codebase for scalability and feature expansion.
- Integrated score tracking and dynamic difficulty adjustment logic.

## **Experience**

Member of Project Association for Computer & Electronics(PACE)

- Led technical planning discussions.
- Coordinated student tech initiatives.
- Managed project documentation and workflow.

## **Education**

Bachelor in Computer Engineering (Tribhuvan University)

Expected Graduation: 2026

Relevant Coursework: Data Structures, Algorithms, Machine Learning, Control Systems, Operating Systems, Database Systems

## **Achievements**

- Built and deployed multiple AI-integrated web applications.
- Experience with GitHub automation workflows.
- Active in technical leadership and student project initiatives.

## **Interests**

- Artificial Intelligence Systems
- Reinforcement Learning
- Scalable Backend Architectures
- AI System Optimization