Ayush Patra

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GitHub | LinkedIn | Personal Website

PROFILE SUMMARY

First-year **Computer Science student at the University of Waterloo** with a strong foundation in algorithms, data structures, and full-stack development. Passionate about creative problem solving and building efficient, scalable software.

EDUCATION

University of Waterloo *Expected 2030*
Bachelor of Computer Science - GPA: 3.98 / 4.00
Relevant Coursework: Programming, Data Structures, Discrete Math, Calculus I, Real Analysis

KIIT International School, Bhubaneswar *Class of 2025*
- Achieved **99.9 percentile in Mathematics** and 98 percentile overall — JEE Main 2025
- Awarded the **All-Rounder Award** for consistent academics and extracurriculars
- Earned Distinction Medals in **Mathematics and Computer Science** — SOF Olympiads

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, TypeScript, SQL, Racket
Frameworks: React, Flask, Node.js, Express.js
Tools & Libraries: FFmpeg, OpenCV, Tailwind CSS, MongoDB, SQLite, Git, LaTeX
APIs & Concepts: OAuth, REST APIs, Full-stack Architecture
Creative Tools: Adobe Premiere Pro, After Effects, Figma, UI/UX Design

PROJECTS

Unmute — Spotify Wrapped Platform *React, TypeScript, Flask, MongoDB*
Built a full-stack platform integrating the **Spotify Web API** using OAuth 2.0. Designed interactive analytics dashboards visualizing long-term listening trends. Optimized backend request handling to reduce latency by batching API calls.

ClipCraft — Automated Video Clipper *Python, FFmpeg*
Engineered an automated pipeline for highlight extraction from long-form videos. Implemented a **scene-change detection algorithm** to efficiently segment clips. Supports batch operations with export-ready FFmpeg processing modules.

Personal Portfolio Website *React, JavaScript*
Developing a responsive personal website built with **React + modular components**. Includes reusable UI blocks, project pages, and a React-based animation system. Designed for performance using lazy-loading, code-splitting, and smooth transitions.

Monte Carlo Poker Simulation Machine *Python*
Developed a Monte Carlo simulation engine to model poker scenarios across thousands of runs. Simulated card distributions, expected values, and win probabilities for various hands. Built a modular architecture enabling future expansion into AI-based strategy evaluation.

LEADERSHIP & ACTIVITIES

- **Finance Team — 9th National Children's Literary Festival (NCLF)** *Sep–Nov 2023*
  Managed sponsorships and logistics for an event with **2,000+ attendees** and a **$60,000 budget**, coordinating with national-level schools and publishers.

- **Model United Nations (MUNs)** *Aug 2022–May 2024*
  Represented school in **10+ national conferences**, winning awards in Economic and Financial Committees.

INTERESTS & LANGUAGES

Interests: Game Development, Design, Music Production, Drumming, Film Editing
Languages: English, French, Hindi, Odia