

Prabin Gautam

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PROFILE SUMMARY

Bachelor's degree holder in Computer Engineering with a strong foundation in software engineering, system design, and human-computer interaction. Current focus includes computer vision, mixed reality, and system-level cybersecurity.

RESEARCH INTERESTS

Software Engineering, Computer Vision, Software Development, Mixed Reality, Cybersecurity (System-level focus), Human-Computer Interaction

EDUCATION

Bachelor of Computer Engineering,

11/2018 – 04/2023

Paschimanchal Campus, Tribhuvan University

- Final Year Project: **GeetSunam** – ML-based music streaming platform (MERN stack)
- First Division (75.24%)

ONGOING RESEARCH

WebSocket Optimization using Shared Workers

- Researching multi-tab WebSocket stability and performance in React apps
- Prototyping Shared Worker-based connection pooling and message routing

HONORS AND AWARDS

- University Entrance Merit Scholarship
- Award for receiving top grade in Grade 10

ACADEMIC PROJECTS

GeetSunam – Music Streaming Web App, (Final Year Project)

Developed a Music Streaming Web Platform, employing React JS as the frontend framework and utilizing the power of Node.js, MongoDB, and Express.js to drive the backend.

- Implemented machine learning for genre-based classification and recommendations to enhance the user experience.
- Integrated bilingual support (English and Nepali)
- Implemented chunk-based music streaming, along with other features.

Class Management System, (Minor Project)

Created a web app named Class Management System, built with React and Django for any academic institution with tons of features for administration, teachers and students

RESEARCH & DEVELOPMENT PROJECTS

classSense: Auto-suggests HTML class names

next-nfetch: Lightweight, interceptor-based client with Next.js caching

NextJS Auth System: Full-stack OTP and magic link authentication

PROFESSIONAL EXPERIENCE

Software Developer, Freshktm

02/2024 – 05/2025

- Developed modular ERP system and dynamic Excel-style grid layouts
- Enabled real-time updates with WebSockets and Shared Workers
- Built custom IndexedDB-based local storage and caching system
- Mentored interns and maintained internal documentation

Full Stack Developer

07/2023 – 01/2024

- Developed Next.js frontend and Node.js backend
- Used Redis to optimize performance

TEACHING & MENTORING

Intern Mentor, Freshktm

02/2024 – 05/2025

- Guided interns on architecture, performance, and frontend best practices

Web Development Mentor, Code for Change

05/2023 – 06/2023

- Taught HTML, CSS, JS, and responsive web design

TECHNICAL SKILLS

Languages & Tools: JavaScript, TypeScript, Python (basic), React, Node.js, Express, Django (minor), MongoDB, MySQL

Frameworks & Libraries: Next.js, Tailwind, Bootstrap, Firebase, Redis

Version Control & Testing: Git, GitHub, Jest

Concepts: REST APIs, Responsive Design, Performance Optimization, SEO, Caching, Authentication, IndexedDB

CERTIFICATES

Informatics IT Bootcamp: Pokhara, Nepal | Jul 2017 | Hands-on foundational training in web development

INTERESTS

Video Games: Building and experimenting with interactive game mechanics and logic systems.

User Experience (UX) Design: Exploring usability, accessibility, and design systems to create intuitive interfaces.

Mixed Reality Interfaces: Interested in blending digital and physical experiences through AR/VR tools and interaction models.

Web Technologies: Keeping up with evolving frontend/backend stacks and developer tooling trends.

System-Level Security: Exploring secure architecture and system-focused practices in modern web and cloud environments.