Gaurav Nyaupane

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Research Interests

- Computer Vision for real-world and low-resource settings
- Applied AI for healthcare and social good
- Medical data systems and assistive technologies
- Real-time systems and scalable software architectures
- Resource-efficient ML systems

Education

Tribhuvan University, Mechi Multiple Campus, Nepal
Bachelor of Computer Applications (BCA), 2017 – 2022
CGPA: **3.66 / 4.00** (Top-ranked student across multiple semesters)

Major Academic Projects:

- *Family Tree:* Computerized Ancestral Lineage Management System (Capstone Project)
- *ERealEstate:* Online Real Estate Auction System
- *Third Eye:* Digital Medical History Management Platform

Publications and Technical Reports

RelayHub: A Resource-Efficient Real-Time Event Broadcasting Gateway
Extended abstract and completed software system, unpublished.
Proposed a lightweight intermediary architecture enabling real-time event delivery by bridging HTTP-based producers with WebSocket clients. The system reduces server-side complexity and resource overhead, particularly for legacy and microservice-based systems.

Third Eye: A Digital Platform for Managing Medical Histories
Undergraduate technical thesis, Tribhuvan University, unpublished.
Designed and implemented an electronic medical record platform addressing fragmented handwritten medical records in Nepal. Focused on secure, centralized access to patient histories to support clinical decision-making and continuity of care.

Glide: A Portable Braille Converter Using Mechanical Miniature Pistons
Conceptual design and abstract, unpublished.
Proposed a handheld assistive device combining OCR-based computer vision with mechanically actuated Braille output to support real-time reading for visually impaired users.

Family Tree: A Computerized System for Visualizing and Managing Ancestral Lineage
Undergraduate technical thesis, Tribhuvan University, unpublished.
Developed a digital system to model, visualize, and manage genealogical relationships, replacing error-prone handwritten lineage records.

ERealEstate: Online Real Estate Auction System
Undergraduate technical thesis, Tribhuvan University, unpublished.
Implemented a web-based real estate auction platform with real-time bidding, focusing on transparency, accessibility, and reduced brokerage dependency.

Automating Bubble Sheet Grading with Bubble Sheet Evaluator
Extended abstract and prototype software, unpublished.
Applied image processing and optical mark recognition techniques to automate grading workflows in educational institutions.

Professional Experience

PlanCare, Perth via Tekkon Technologies, Kathmandu
Senior Software Engineer, Oct 2023 – Present

- Contributed to the development and maintenance of Caretaskr, a healthcare platform serving 1,500+ users across Australia.
- Led the architectural transition from Angular to React using a micro-frontend strategy, enabling incremental modernization without system downtime.
- Developed and deployed 60+ production features and enhancements based on direct operational feedback.
- Initiated and architected the PlanCare Portal mobile application using React Native.
- Improved platform performance by approximately 35 percent through backend and frontend optimizations.
- Designed and implemented over 250 unit tests, substantially increasing code reliability and maintainability.

Premium Technologies, Kathmandu
Full Stack Developer, Dec 2022 – Sep 2023

- Designed and implemented NotificationHub, a cloud-based real-time notification platform supporting large-scale message delivery.
- Built a custom authentication and authorization service supporting OAuth2, JWT, and role-based access control.
- Contributed to core banking and loan management systems, improving transaction workflows and reducing manual processing overhead.

Crystal Solution, Jhapa
Software Developer / Team Lead, Jan 2022 – Jul 2022

- Led a team of five developers in building a conference management system for large-scale institutional events.
- Migrated legacy data access layers to modern ORM-based architectures, improving performance and maintainability.
- Achieved high test coverage across multiple systems, significantly reducing post-deployment defects.

Mechi Multiple Campus, Tribhuvan University
Software Development Intern, Mar 2021 – Jun 2021

- Developed an automated attendance system using OpenCV-based face recognition.
- Contributed to the development of an Education Management Information System serving over 1,000 students.

Technical Skills

Programming Languages: C#, Python, JavaScript, TypeScript
Frameworks and Libraries: ASP.NET Core, React, Django, NumPy (working knowledge), OpenCV
Systems and Tools: Docker, Git, Azure DevOps, GitHub Actions, Linux
Databases: PostgreSQL, MySQL, MS SQL Server, Redis

Awards and Honors

- Best Communicator of the Year, Tekkon Technologies (2025)
- Academic Excellence Awards, BCA (Multiple Semesters)
- 50 percent Tuition Fee Waiver Scholarship, Tribhuvan University (2018)
- Winner, Regional Science Exhibition, District Education Office, Jhapa

Teaching & Mentoring Experience

- Facilitated lab sessions for undergraduate computer science courses multiple times.
- Mentored a group of 2 classmates on course project and associated theses, providing guidance on methodology, coding, and documentation.
- Delivered more than 5 in-class presentations as part of ongoing lectures, teaching course topics to peers under faculty supervision.

- Assisted a faculty member in reviewing and providing feedback on initial project proposals from 4th-semester students, leveraging expertise gained as a senior (8th-semester) student.
- Organized One-week Programming Bootcamp for high school students

Community Engagement

- Co-founder, BCA Tribhuvan University Facebook community
- Founding Member, BCA Student Association, Mechi Multiple Campus
- Host, Sports week organized by BCA Student Association
- Volunteer, Nepal Red Cross Society blood donation campaigns

Languages

- Nepali (Native)
- English (Professional proficiency, IELTS 7.5)
- Hindi (Fluent)

References

Available upon request.