

# Snehil Sundriyal

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## Skills

**Languages:** C/C++, Go, JavaScript, SQL

**Technologies & Tools:** Docker, NodeJS, ExpressJS, MongoDB, Microservices, ReactJS, TailwindCSS, Postman

## Education

**BITS Pilani — M.Sc. Physics and B.E. Electrical and Electronics Engineering**

Oct 2022 – Present

Relevant Coursework: Computer Programming, Internet of Things, Digital Design, Microprocessors and Interfacing

## Work Experience

**CSIR – CSIO, Chandigarh**

**Research and Development Intern**

May 2024 – Aug 2024

- Simulated **15+ optoelectronic devices** including waveguides, couplers, and rectifiers using **Ansys Lumerical** for optimization.
- Modeled light propagation in **10+ photonic circuits** with **INTERCONNECT** and **FDTD** for time-domain modeling.
- Performed modal analysis using **MODE solver** on **8+ waveguide structures**, characterizing optical coupling in photonic systems.
- Optimized device performance across **50+ simulation iterations**, achieving target metrics for coupling and propagation loss.
- Analyzed **20+ simulation datasets**, generating technical reports on device behavior and performance trends for research.

## Projects

**Go Movies — Web Development, Database Management**

May 2025 – Jul 2025

- Architected a full-stack **movie catalog platform** with **Go REST API** and **PostgreSQL**, modeling **5+ core entities**.
- Designed and exposed **20+ REST endpoints** for movies, genres, ratings, users, and tokens with JSON responses.
- Implemented **JWT-based authentication** and custom **CORS middleware**, securing **10+ protected routes** with role-based access.
- Built a **React** frontend styled with **DaisyUI**, delivering complete **CRUD workflows** with pagination and filtering capabilities.
- Integrated frontend with backend APIs, enabling data operations over **100+ seeded records** with clean request-response cycles.
- GitHub Repository:** *Backend, Frontend*

**Location-Verified Attendance System — Web Development**

Oct 2024 – Nov 2024

- Created a web-based **attendance system** with **React** and **Express.js**, supporting **350–400 students per session**.
- Enabled instructors to complete attendance in **5 minutes**, reducing processing time by **70%** vs traditional methods.
- Engineered **QR-based workflow** with **geolocation verification**, computing distance and rejecting submissions beyond **50-meters**.
- Automated attendance by persisting **300–400 entries per lecture** to **Google Sheets** with real-time sync.
- Deployed system for **Electrical Department, BITS Pilani**, processing **15+ sessions weekly** with zero downtime.
- GitHub Repository:** *Source Code*

**BnB Booking Platform — Full-Stack Web Development**

Sep 2023 – Dec 2023

- Built a full-stack **booking platform** with **Go backend** and **PostgreSQL**, supporting availability and bookings across **5+ states**.
- Created admin workflows managing **10+ room types**, handling **100+ concurrent bookings** with real-time availability.
- Engineered backend for **testability**, writing **50+ tests** covering HTTP handlers, database queries, and booking logic.
- Implemented **session-based authentication** and **CSRF protection**, securing **8+ admin routes** with role-based access.
- Automated **email notifications** for confirmations and cancellations, processing **200+ transactional emails** across user workflows.
- GitHub Repository:** *Source Code*

## Courses/Certificates

- Building Modern Web Applications with Go — Udemy
- Introduction to AI and Machine Learning with Go — Udemy

Sep 2023 - Dec 2023

Dec 2025 - Present

## Hobbies/Commitments

**Core Member, The Music Club, BITS Pilani**

Jul 2023 – Present

- Performed as a **Vocalist** at flagship events including **Oasis** and **Apogee**, representing the institute at inter-college competitions.
- Designed and applied custom **vocal patches** for live performances, developing hands-on **audio mixing** workflows in **Reaper** and **Ableton Live**.
- Contributed to the organization and audition process of **Andholika**, the flagship solo singing competition at **Oasis**, managing **300+ participants** and participating in auditions to shortlist **6 finalists** for evaluation by an external judge.