Balbir Singh

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Personal Statement

MSc Web and Mobile Development Technologies graduate (Commendation, 66%) with a B.Tech in Computer Science Engineering and practical experience delivering deployed web and desktop applications. Experience with JavaScript, TypeScript, React, Next.js, Firebase and REST APIs across projects involving full-stack development, AI integration, authentication and data management. Experienced in translating requirements into functional applications, evaluating technical approaches, debugging, testing and deployment. Seeking a Graduate Software Engineer opportunity to contribute to reliable, user-focused software.

Technical Skills

- **Programming & Web:** JavaScript, TypeScript, SQL, HTML5, CSS3
- **Frontend Development:** React.js, Next.js, Tailwind CSS, Responsive Web Design
- **Backend & APIs:** Node.js, REST APIs, Next.js API Routes, Strapi, OpenAI API
- **Databases & Cloud:** PostgreSQL, Firebase Authentication, Cloud Firestore, Cloudflare Workers
- **Software Engineering:** OOP, Requirements Analysis, Data Modelling, Authentication & Authorisation, Debugging, Testing
- **Development & Deployment Tools:** Git, GitHub, VS Code, Vercel, Render, GitHub Actions
- **Development Practices:** User-Flow Design, API Integration, Technical Documentation, Iterative Prototyping, AI-Assisted Development (Claude Code, OpenAI Codex, Google Antigravity)

Education

Northumbria University London — United Kingdom | Sep 2024 – Nov 2025
MSc Web and Mobile Development Technologies | Commendation (66%)

- **Relevant Modules:** Web Engineering, Mobile Application Development, Cloud Computing, Internet of Things, UI/UX Design, Web and Mobile Application Security.
- **Dissertation:** HealthAssist — designed and evaluated an AI-powered, non-clinical health platform integrating conversational AI, contextual memory, wellness tracking and emergency-response simulation.

Maharshi Dayanand University (MDU) — India | Aug 2020 – Jun 2024
B.Tech Computer Science Engineering | 72.65% | SGPA: 8.0

- **Relevant Modules:** Data Structures and Algorithms, Database Management Systems, Object-Oriented Programming, Operating Systems, Computer Networks, Software Engineering.
- **Final-year project:** Doctor Appointment Booking System — a full-stack application developed using React, Next.js, Strapi and PostgreSQL, supporting doctor discovery, authenticated appointment booking and cancellation. Live

Projects

Hustle — Shift, Earnings & Financial Planning Platform | Live
Personal Project | Next.js, React, TypeScript, Firebase, Tailwind CSS, OpenAI API, Vercel | Jun 2026 – Present
Inspired by managing rotating shifts across multiple jobs and the difficulty of tracking working hours, expected earnings and UK payroll deductions in one place.

- Conceived, designed and shipped a full-stack web application for UK hourly workers, combining multi-job shift scheduling, payday forecasting and PAYE/National Insurance estimates.
- Defined application requirements, data models and payroll calculation rules, including integer-pence storage, strict data validation and safeguards against misleading earnings estimates.
- Directed AI-assisted development of the application, including rota screenshot import and conversational AI features, incorporating validated outputs, user-confirmed previews and usage limits.
- Oversaw authentication, Firestore data access controls, protected API routes and encrypted OpenAI API-key storage using Google Cloud KMS.
- Managed testing and deployment workflows using GitHub Actions, Vitest and Playwright, with over 3,600 automated tests passing on the production branch.

EchoFlow — Local-First AI Dictation Desktop App & Website | Live
Personal Project | Tauri, Rust, React, TypeScript, Next.js, GSAP, Playwright | May 2026 – Present

- Conceived and released EchoFlow, a Windows desktop dictation application designed as a privacy-focused alternative to cloud-based tools, combining on-device speech recognition, optional local AI text refinement and system-wide text insertion.
- Directed AI-assisted development and refinement of hold-to-talk dictation, local model management, GPU-to-CPU fallback and multilingual transcription, including fixes for Punjabi transcription issues.
- Directed improvements to application distribution, reducing the Windows installer to approximately 11.2 MB and supporting signed application updates.

- Delivered a separate Next.js and React product website featuring GSAP animations, installer distribution, documentation and consent-first analytics, supported by 308 Playwright tests and GitHub Actions CI.

HealthAssist — AI-Powered Non-Clinical Health Companion | Live
MSc Dissertation Project | React, TypeScript, Firebase, Cloudflare Workers, OpenAI API | May 2025 – Aug 2025
Created to bring conversational health guidance, wellness tracking and emergency preparation into one accessible, non-clinical platform.

- Designed and delivered a non-clinical health and wellness application combining conversational AI, real-time voice interaction, contextual memory, mood tracking and medication management.
- Defined user workflows and directed AI-assisted integration of a React/TypeScript frontend with Firebase Authentication, Cloud Firestore and a Cloudflare Worker backend.
- Incorporated server-side API protection, authenticated access, input validation and durable usage quotas to support secure and controlled AI interactions.
- Evaluated and stabilised the application through usability feedback, production checks and automated testing, with 88 Worker, 26 frontend and 32 Firestore security-rule tests passing in the final recorded release.

Doctor Appointment — Full-Stack Booking Application | Live
B.Tech Final-Year Project | React, Next.js, JavaScript, Strapi, PostgreSQL, Kinde | 2024

- Developed and refined an appointment-booking application featuring searchable doctor profiles, authenticated appointment bookings, availability checking and cancellation.
- Integrated Next.js server routes with Strapi REST APIs and Kinde authentication, incorporating server-side validation and ownership checks.
- Directed subsequent database security improvements, restricting unnecessary Supabase API access across 36 tables while preserving application functionality.

Technical Training & Experience

QSpiders — Java Full-Stack Trainee | Delhi, India | Feb 2024 – Sep 2024 | Certificate

- Completed structured training in Java, SQL, HTML, CSS and JavaScript, covering object-oriented programming, relational databases, DOM manipulation and web development.
- Applied programming, debugging, Git and API integration concepts through guided exercises and full-stack application development.

Bharat Intern & Tech-A-Intern — Frontend Development Virtual Internships | Remote | Oct 2023 – Nov 2023 | Certificate

- Developed frontend applications using HTML, CSS and JavaScript, including a weather app, to-do list, temperature converter and media carousel.
- Integrated the OpenWeather API and browser local storage to support live weather data, persistent information and interactive interfaces.

Additional Work Experience

Jet2.com — Passenger Service Agent | London Luton Airport | May 2026 – Present

- Supported passenger check-in, boarding and airport operations in a fast-paced environment, following operational procedures and maintaining accuracy under time pressure.
- Resolved passenger issues, coordinated with colleagues and adapted to changing operational demands while maintaining customer service standards.

House of Fraser — Sales Assistant | Luton, UK | Nov 2025 – Present

- Delivered customer service in a busy retail environment, handling enquiries, resolving issues and supporting daily store operations.
- Worked collaboratively to manage competing priorities, maintain service standards and support efficient store operations.

Achievements & Certifications

- **Runner-Up — SQL Tech Gig, MERI Annual Fest | Mar 2024 |** View Award
  Awarded second place in a practical SQL competition involving database queries and problem-solving challenges.
- **Front-End Domination — Sheryians Coding School |** Certificate
  Completed frontend development training covering HTML, CSS, JavaScript, React, Tailwind CSS and interactive web design.
- **Frontend Development — IBM SkillsBuild |** Certificate
  Completed foundational training in HTML and CSS.