

DHURKA MANCHUKAN

Associate Software Engineer — Full-Stack, Mobile & AI-Integrated Products

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PROFESSIONAL SUMMARY

Associate Software Engineer with 1.5 years of production experience shipping web, mobile, and AI-integrated applications end-to-end — from a live cross-platform Flutter matrimony app serving real users, to a self-built AI proposal-generator SaaS with Stripe billing, to a desktop AI pair-programming tool with AST-scoped context. Background in Applied Physics & Electronics informs a systems-level approach to engineering, now extending into embedded/IoT and ML-driven products. Builds independently and fast — most projects are designed, built, and deployed solo, from architecture through monetization.

TECHNICAL SKILLS

Languages: JavaScript (ES6+), TypeScript, Dart, Python, HTML5, CSS3

Frontend: React.js 18/19, Next.js, Flutter, Vite, Redux Toolkit, Redux Persist, SWR, Axios, Context API

UI & Styling: Tailwind CSS, Material UI, shadcn/ui, Framer Motion, GSAP, React Hook Form, Zod

Mobile: Flutter, Provider, BLoC (working knowledge), GoRouter, ShellRoute, Deep Linking

Backend: Node.js/Express, REST API design, JWT, bcrypt, PostgreSQL (Neon), SQLite, Nodemailer

AI & LLM Integration: OpenAI GPT-4o-mini, structured JSON output, Tree-sitter/AST parsing, prompt engineering, async polling architectures

Auth & Payments: Firebase Auth (Google/Apple/Facebook OAuth + email), Stripe (subscriptions + webhooks), PostFinance, JWT

Accessibility & i18n: WCAG 2.1 AA, ARIA, i18next (EN/DE/FR), locale-aware formatting

Performance: React.lazy/Suspense, useMemo/useCallback, code splitting, Core Web Vitals

DevOps & Tools: Git, GitHub, GitHub Actions, Vercel, Render, Hostinger, Cloudflare Pages/CDN, Netlify, ESLint, Agile/Scrum

WORK EXPERIENCE

Gray Corp (Pvt) Ltd — Associate Software Engineer | May 2025 – Present

- Developed and maintained production-grade React.js and TypeScript applications, building 30+ reusable UI components with strong type safety and scalable component architecture.
- Designed and implemented a Redux Toolkit state management architecture with Redux Persist across multiple business domains, including flights, hotels, packages, payments, localization, and user management.
- Built a scalable data-fetching architecture using SWR, implementing caching strategies, requested deduplication, and optimized API data management for high-traffic application workflows.
- Integrated 15+ RESTful API endpoints using Axios for authentication, booking workflows, user profiles, and dynamic pricing features with comprehensive loading, validation, and error handling.
- Implemented secure authentication workflows using Firebase Authentication (Google, Apple, Facebook OAuth) and JWT-based authentication with protected routes, token refresh, and persistent sessions.
- Improved application performance through React.lazy, Suspense, code splitting, memoization techniques (useMemo/useCallback), and route-level optimization.
- Converted Figma UI designs into responsive, accessible, and mobile-first interfaces following WCAG guidelines across desktop, tablet, and mobile breakpoints.
- Performed cross-browser testing and UI validation across Chrome, Firefox, Safari, and mobile browsers to ensure consistent user experience.
- Managed frontend deployments using Hostinger and Cloudflare Pages/CDN, including SSL setup, domain configuration, environment variables, and production release workflows.
- Developed Marrify, a cross-platform Flutter/Dart matrimony application for Web, Android, and iOS with Firebase Authentication, Stripe payment integration, and AI-powered matchmaking through REST API communication.

Gray Corp (Pvt) Ltd — Software Engineering Intern | Nov 2024 – May 2025

- Developed reusable React.js components and frontend modules used across production features, improving UI consistency and development efficiency.

- Integrated frontend applications with REST APIs, managing asynchronous operations, API responses, data transformation, and error handling.
- Implemented interactive UI improvements using GSAP and Framer Motion animations while maintaining responsive performance and smooth user experiences.
- Collaborated with designers and developers in Agile workflows to deliver Figma-based UI implementations within sprint deadlines.
- Promoted to Associate Software Engineer based on consistent delivery of production-quality features, technical growth, and ownership of frontend development tasks.

KEY PROJECTS

BatteryTwin AI — Battery Management System Digital Twin — Python, Machine Learning (RandomForest), Embedded Systems, React

- Built a full-stack AI-powered digital twin for battery management, combining embedded sensor data modeling with a RandomForest regression model achieving $R^2 = 0.998$.
- Designed as a portfolio-flagship project bridging Applied Physics & Electronics background with software/ML engineering.

ClientScope — AI Proposal Generator (SaaS) — React 19, Node.js/Express, PostgreSQL (Neon), OpenAI GPT-4o-mini, JWT, bcrypt, Stripe

github.com/dhurka3782/clientScope

- Built a full-stack AI proposal generator converting client briefs into structured proposals via OpenAI GPT-4o-mini with response_format JSON output.
- Designed a JWT-protected Express backend with a Stripe subscription paywall (Starter/Agency tiers); migrated database from SQLite to Neon PostgreSQL.
- Added a client CRM with status lifecycle, soft deletes, activity timeline, proposal-to-client linking, and an AI Proposal Quality Score panel.

Marryfy — Cross-Platform Matrimony App — Flutter, Dart, Firebase Auth, Stripe, Provider, GoRouter, REST APIs

marryfy.io

- Built a production cross-platform matrimony app running natively on Android, iOS, and web from a single Flutter/Dart codebase with consistent, platform-adaptive UX.
- Implemented Firebase Authentication (Google, Apple, email/password, mobile OTP), Stripe payments with webhook-based token crediting, and AI matchmaking via async polling REST API.
- Designed a 4-step progressive registration wizard with inline validation, conditional rendering, and bulk image upload with MIME-type preservation.

AI Coding Assistant — Desktop AI Pair-Programmer — Python, PySide6, Tree-sitter, QThread, AST Parsing

- Built a desktop AI pair-programming tool that parses the real abstract syntax tree via Tree-sitter to scope Explain/Refactor/Generate prompts to the exact function or class under the cursor.
- Implemented streaming LLM responses on a background QThread worker, a hunk-level diff review system with accept/reject controls, multi-file tabs, and a command palette (Ctrl+Shift+P).

Travel Booking Platform — React 18, Vite, Redux Toolkit, SWR, Axios, Tailwind CSS, MUI, i18next, GSAP, Framer Motion, PostFinance, jsPDF

- Architected a full-featured travel booking platform (flights, hotels, packages, cruises) for Swiss/European markets.
- Delivered i18next internationalisation (EN/DE/FR) and CHF/EUR multi-currency support; integrated PostFinance payments and jsPDF booking confirmations.

AgriConnect — Precision Agriculture IoT Dashboard — React 19, TypeScript, Tailwind CSS 4, Chart.js, Framer Motion, Vite, Canvas API

agri-connect-alpha-seven.vercel.app

- Built a production-grade IoT dashboard with live sensor telemetry (temperature, soil moisture, humidity, light), a threshold-based alert engine, and Chart.js dual-axis visualisations.
- Designed a canvas-based interactive farm zone map with pixel-accurate hit detection and 24-hour/7-day historical playback.

Vela Resort — Luxury Hotel Website — React 19, Tailwind CSS 4, Framer Motion 12, shadcn/ui, React Hook Form, Zod, Sonner

resort-henna.vercel.app

- Built a luxury Maldives resort website with editorial typography, glassmorphism UI, and sub-300ms animations targeting Lighthouse 95+.
- Delivered an interactive lightbox gallery, React Hook Form + Zod contact form, dynamic seasonal pricing calendar, and full WCAG 2.1 AA accessibility.

react-d-calendar — Open-Source NPM Package — JavaScript, TypeScript, React
[dhurka3782.github.io/react-d-calendar-demo](https://github.com/dhurka3782/react-d-calendar-demo)

- Published an open source React calendar component, demonstrating JS packaging, semantic versioning, and npm registry distribution.

Additional projects: PromptForge (offline-first Flutter AI prompt builder), Smart Home Control App (Flutter/Dart), AI Resume Analyzer, Café Élysée, Secure Password Generator — all at github.com/dhurka3782

EDUCATION

BSc in Applied Physics & Electronics 2024
Eastern University, Sri Lanka — Trincomalee Campus