



ARSHDEEP RANGI

FULL-STACK WEB DEVELOPER

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PROFILE

With 6+ years of full-stack development experience, I've evolved from a curious computer science graduate into a versatile developer who thrives on transforming challenges into elegant, user-focused solutions. My journey spans from building simple WordPress sites to architecting scalable Ruby on Rails backends, crafting intuitive React web applications, and developing cross-platform React Native mobile apps that serve thousands of users across healthcare and research domains. Whether building RESTful APIs that power seamless data exchange, creating interactive educational tools with game engine integration, or developing offline-first mobile applications for clinical settings, I bring a holistic understanding of the entire development stack. I'm known among my team members for my problem-solving approach, attention to detail, and ability to bridge the gap between backend architecture and frontend user experience.

TECHNICAL EXPERTISE THROUGH REAL-WORLD APPLICATIONS

RUBY ON RAILS ECOSYSTEM

When Tactica Interactive needed to build research applications for healthcare professionals studying memory degradation and sleep disorders, I led the backend architecture using Ruby on Rails with MVC architecture. The challenge wasn't just building a typical web app—we needed to handle sensitive patient data, complex questionnaire logic, and real-time data analysis.

Technical Journey:

- Architected and maintained several Rails backends powering React and React Native applications, serving hundreds of users with high availability and performance
- Designed and implemented RESTful APIs with JSON serialization, rate limiting, and CORS handling for secure cross-platform consumption
- Built comprehensive authentication and authorization systems featuring 2FA, email verification, and session management with best security practices
- Optimized database performance through advanced ActiveRecord techniques including complex joins, eager loading with includes/preload, custom scopes, and query optimization to eliminate N+1 queries
- Developed service-oriented architectures applying SOLID principles, design patterns, and custom service objects for maintainable, scalable codebases
- Implemented real-time features using Action Cable for WebSockets, instant notifications, and collaborative functionality
- Deployed multi-layer caching strategies with Redis for fragment caching, page caching, and session storage, significantly improving response times and reducing database load
- Managed background job processing with Sidekiq and Delayed Job for asynchronous tasks including email delivery, data exports, and webhook processing
- Enforced security best practices including CSRF protection, SQL injection prevention through parameterized queries, XSS mitigation, secure headers configuration, and credential encryption
- Conducted performance optimization through database indexing, read replica configuration, query profiling, and continuous monitoring
- Maintained code quality standards using Rubocop for linting, conducting thorough code reviews, and implementing refactoring practices guided by established conventions
- Integrated Active Storage for file uploads and image processing with ImageMagick, supporting multiple cloud storage providers
- Developed robust webhook architectures for third-party integrations with proper retry logic, error handling, and payload verification
- Created custom middleware for request/response processing, authentication flows, and cross-cutting concerns
- Managed deployments across Heroku, AWS (EC2, RDS, S3), and Docker environments with CI/CD pipelines, zero-downtime strategies

Technologies Used: Ruby on Rails, Ruby, PostgreSQL/MySQL, ActiveRecord, RESTful APIs, JSON serialization, Action Cable, WebSockets, Redis, Delayed Job, Active Storage, ImageMagick, Devise, Rack CORS, Pundit/CanCanCan, Rubocop, Brakeman, Heroku, AWS (EC2, RDS, S3, CloudFront), Puma, Nginx, Action Mailer, SendGrid/Postmark, Webpacker, Bundler, Rollbar

REACT ECOSYSTEM

At Tactica Interactive, healthcare researchers needed intuitive, responsive dashboards to visualize complex patient data and manage multi-step questionnaires in real-time. I built the web frontend using React, creating seamless interfaces that healthcare professionals could use across hospitals and research facilities. The complexity lay in rendering dynamic forms based on patient responses, displaying real-time analytics, and ensuring data integrity while maintaining a smooth user experience—all while meeting strict healthcare compliance standards.

Technical Journey:

- Developed production-grade web applications using modern React patterns, hooks, and ecosystem tools, delivering responsive and intuitive user interfaces
- Implemented comprehensive state management solutions using Redux with middleware (Redux Thunk, Redux Saga) and Context API for scalable application state
- Mastered advanced React hooks including custom hooks for reusable logic, useReducer for complex state, useMemo and useCallback for performance, and useRef for DOM manipulation
- Optimized application performance through React.memo for component memoization, lazy loading with React.Suspense, code splitting, bundle analysis, and tree shaking
- Built sophisticated form solutions using Formik and React Hook Form with validation schemas (Yup), dynamic fields, and error handling
- Implemented styling architectures with CSS-in-JS (Styled Components, Emotion), CSS Modules, and component libraries (Material-UI, Chakra UI, Tailwind and Bootstrap) for consistent design systems
- Developed server-side rendered applications with Next.js and Gatsby for improved SEO, faster initial page loads, and static site generation
- Built Progressive Web Apps with service workers, caching strategies, and installable web app capabilities
- Created data visualizations and interactive charts using Chart.js, and Recharts with responsive and accessible designs
- Implemented internationalization (i18n) supporting multiple languages, locale switching, and localized content management
- Ensured accessibility compliance with WCAG standards, screen reader support, semantic HTML, keyboard navigation, and ARIA attributes
- Configured error boundaries for graceful error handling, integrated error tracking solutions, and implemented fallback UI components
- Designed responsive layouts adapting to various screen sizes, devices, and orientations using CSS Grid, Flexbox, and media queries
- Utilized modern build tools including Webpack for custom configurations and Vite for fast development and optimized production builds
- Maintained code quality with ESLint for linting, Prettier for formatting, and React Developer Tools for debugging and performance profiling
- Deployed applications across Netlify, Vercel, AWS (S3, CloudFront), and Docker with automated CI/CD workflows

Technologies Used: React.js, JavaScript ES6+, JSX, React Hooks (useState, useEffect, useContext, useReducer, useMemo, useCallback, useRef, custom hooks), Redux, Redux Toolkit, Redux Thunk, Redux Saga, Context API, React Router, Axios, Fetch API, Formik, React Hook Form, Yup, Styled Components, CSS Modules, Sass/SCSS, Material-UI (MUI), Tailwind CSS, Next.js, Webpack, Vite, ESLint, Prettier, Chart.js, Recharts, React Helmet, Phaser.js, React Query, Lodash, Vercel, AWS (S3, CloudFront, Amplify), Husky, lint-staged, React Error Boundary, Rollbar, Google Analytics

REACT-NATIVE ECOSYSTEM

Tactica Interactive's research applications needed to extend beyond web browsers—healthcare professionals required mobile apps to collect patient data during in-person assessments, conduct surveys in clinical settings, and access research tools offline in areas with limited connectivity. I developed cross-platform mobile applications using React Native that worked seamlessly on both iOS and Android devices. The challenge was ensuring offline data collection with reliable synchronization, local and push notifications, and delivering a native-quality experience that healthcare professionals could trust in various research scenarios.

Technical Journey:

- Built cross-platform mobile applications for iOS and Android, delivering native-quality experiences with shared JavaScript codebases and platform-specific optimizations
- Implemented complex navigation patterns using React Navigation with stack, tab, drawer navigators, nested navigation, and custom transitions
- Configured deep linking and universal links for seamless app-to-web integration, marketing campaigns, and user acquisition flows
- Developed state persistence strategies maintaining user context across sessions using AsyncStorage, secure storage, and cloud synchronization
- Bridged native modules for iOS (Objective-C/Swift) and Android (Java/Kotlin) to access platform-specific APIs and integrate third-party native libraries
- Integrated critical device features including camera with image capture and processing, GPS/location services with geofencing, and push notifications (FCM, APNs)
- Architected offline-first applications using AsyncStorage for local data persistence, implementing conflict resolution and bidirectional sync
- Automated build and deployment processes using Fastlane for iOS and Android, reducing manual steps and ensuring consistent releases
- Integrated crash reporting and analytics using Crashlytics, and Firebase Analytics for monitoring app health and user behavior
- Utilized hardware capabilities including device sensors, Bluetooth LE for IoT connectivity
- Configured background processing for scheduled notifications, background sync, location updates, and long-running tasks
- Designed responsive mobile interfaces handling various screen sizes, safe areas, notches, orientation changes, and tablet-specific layouts
- Managed App Store and Google Play deployments including metadata optimization, screenshot preparation, version management, and compliance with store guidelines

Technologies Used: React Native, JavaScript ES6+, Expo, React Navigation, Redux, Redux Toolkit, Redux Persist, Context API, Async Storage, Axios, Fetch API, React Native Paper, Native Base, React Native Elements, Styled Components, React Hook Form, Formik, React Native Camera/Vision Camera, React Native Maps, Geolocation, React Native Push Notifications, Firebase Cloud Messaging (FCM), Apple Push Notification Service (APNs), NetInfo, React Native FS, React Native Image Picker, React Native Document Picker, React Native SVG, React Native Reanimated, React Native Gesture Handler, React Native WebView, React Native Share, Xcode, Android Studio, Gradle, CocoaPods, Metro Bundler, React Native Debugger, Flipper, Crashlytics, Firebase Analytics, TestFlight, Google Play Console, BrowserStack, React Native Config, react-native-dotenv, Hermes (JavaScript engine), ESLint, Prettier

WORDPRESS & PHP ECOSYSTEM

Beyond modern web apps, I've maintained and enhanced dozens of WordPress sites for various clients, requiring deep understanding of both legacy and modern PHP development practices.

Technical Journey:

- Developed custom WordPress themes from scratch using PHP, implementing complex business logic and custom post types
- Implemented custom email systems using WordPress hooks and filters for automated client communications
- Created performance optimization strategies including caching, database optimization, and image compression
- Managed multi-server deployments across Pantheon, GoDaddy, Digital Ocean, and Small Orange hosting platforms
- Developed custom plugin functionality for client-specific requirements and third-party API integrations
- Implemented security best practices including regular updates, backup systems, and vulnerability monitoring

Technologies Used: WordPress, PHP, Custom Theme Development, Stripe Integration, Multi-hosting Management

DEVOPS & INFRASTRUCTURE MANAGEMENT

Managing production applications serving healthcare researchers required robust infrastructure and monitoring solutions.

Technical Journey:

- Designed and implemented CI/CD pipelines using Git workflows and automated deployment strategies
- Managed AWS infrastructure including EC2, RDS, and S3 for scalable application hosting
- Implemented database backup and recovery systems ensuring 99.9% uptime for critical research data
- Set up monitoring and alerting systems using various tools for proactive issue detection
- Managed domain and DNS configurations across multiple hosting providers
- Implemented SSL certificate management and security hardening for HIPAA compliance
- Created documentation and runbooks for deployment processes and incident response

Technologies Used: AWS, Heroku, Git, Database Administration, SSL Management, Performance Monitoring

WORK EXPERIENCE

FULL-STACK DEVELOPER

Tactica Interactive, Winnipeg | March 2019 - Present

WEB DEVELOPER INTERN

Blueshift Innovations, Winnipeg (one month Internship) | January 2019

JAVA DEVELOPER INTERN

Infowiz, Chandigarh (one month internship) | June 2017

EDUCATION BACKGROUND

WEB DEVELOPMENT DIPLOMA

The University of Winnipeg PACE | January 2018 - January 2019

- The Web Development Diploma program exposes students to a wide variety of web programming technologies (including HTML5, CSS3, and Modern JavaScript) with an emphasis on PHP programming.
- The program curriculum also includes essential training in project management, business writing, web security, information architecture, and network administration to round out students' skill sets.
- The program culminates in a comprehensive e-commerce capstone project and month-long internship placement.

BACHELOR DEGREE, COMPUTER SCIENCE ENGINEERING

Chandigarh University | August 2013 - April 2017

- Computer Science Engineering (CSE) deals with the design, implementation, and management of information systems of both software & hardware processes. A computer science engineer specializes in the programming languages, data structures, and design of computational systems.
- Pursuing Computer Science & Engineering from one of the best CSE engineering universities in Punjab gives you an extra edge. It caters to a thriving research environment, advanced industry-sponsored infrastructure, and stimulating teaching aid. Their program covers all fundamental as well as advanced concepts of engineering and computing, paired with a chance to gain exposure in emerging technologies such as the Internet of Things (IoT), Mobile Computing, and Open Source and Open Standard.