




PROJECT DOCUMENTATION

Personal Portfolio & Project Showcase Website

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Project Overview

Project Title

Personal Portfolio & Project Showcase Website - ArjunSingh.org

Objective

To build a secure, SEO-optimized, and professional-grade personal website that serves as both an interactive resume and a technical project portfolio - demonstrating real-world application design, backend integration, and enterprise-level security practices.

Key Highlights

- **Responsive Design:** Fully responsive and mobile-optimized interface
- **SEO Excellence:** Advanced SEO and Schema integration for Google visibility
- **Secure Backend:** PHP backend with PHPMailer, .htaccess rules, and form validation
- **Real Projects:** Project-specific pages showcasing telecom automation tools (DEDUPE-IO, SRT Tracker, Laundry System)
- **Scalable Architecture:** Configurable design for future expansion (admin dashboard, analytics)

Key Achievement

Built from scratch using core web technologies without CMS dependency, demonstrating end-to-end system ownership from Frontend to Backend, Security, and SEO.



System Architecture

Architecture Overview

The project follows a **modular static-dynamic hybrid architecture**:

Frontend HTML5, CSS3, JavaScript	Backend PHP 8.2 (Hostinger LAMP)
Mailer PHPMailer (SMTP)	Security .htaccess + reCAPTCHA
Hosting Hostinger (SSL enabled)	Version Control Git + GitHub

Technology Stack

Layer	Technology	Purpose
Frontend	HTML5, CSS3, JS (Vanilla)	Responsive UI, animations, navigation
Backend	PHP 8.2	Form handling, server-side validation
Mail Engine	PHPMailer (SMTP)	Secure email sending
Hosting	Hostinger	Production environment with SSL
Version Control	Git, GitHub	Source management
Analytics	Google Analytics 4	Visitor insights
reCAPTCHA	Google v2	Spam protection
Schema Markup	JSON-LD	Rich SEO integration
Error Handling	Custom 403/404/500 pages	Enhanced user experience



Directory Structure

```
/public_html/
├── index.html                    → Home Page
├── resume/                      → Resume Page + Downloads
│   ├── index.html              → Resume Page
│   ├── resume_arjun_singh.pdf  → Resume PDF for Download
│   └── resume_arjun_singh.docx → Resume Word for Download
├── projects/                   → Individual Project Pages
│   ├── dedupe-io/index.html    → DEDUPE-IO Page
│   ├── srt-tracker/index.html  → SRT Tracker Page
│   └── laundry/index.html      → Laundry Page
├── admin-dashboard.php         → Protected admin area
├── contact-form.php            → PHPMailer endpoint
├── config.php                  → Secure environment config
├── .htaccess                   → Security & performance config
├── sitemap.xml                 → SEO index file
├── robots.txt                  → Search engine directives
├── schema_org_data.html        → JSON-LD SEO schema
├── assets/                     → Images, downloads, and screenshots
│   ├── images/
│   │   ├── favicon.png        → Image for symbol of brand
│   │   ├── logo.png           → Image for Log of brand
│   │   └── profile.png         → Image for Profile of brand
│   ├── downloads/
│   │   ├── DEDUPE_IO.zip       → DEDUPE-IO ZIP File for Download
│   │   ├── SRT_System.zip      → SRT ZIP File for Download
│   │   └── Technosoft_LMS.zip   → Laundry File for Download
│   ├── award/                  → All Awards and Certificated Screenshots in .png Format
│   └── screenshots/            → All Projects Screenshots in .png Format
│       ├── dedupe/             → DEDUPE-IO Screenshots in .png Format
│       ├── srt/                 → SRT Screenshots in .png Format
│       └── laundry/             → Laundry-IO Screenshots in .png Format
└── PHPMailer/                  → Mailer library (GitHub standard)
```



Security & Privacy Framework

✔ Implemented Security Measures

Security Layer	Implementation	Description
SSL (HTTPS)	Enforced via .htaccess	100% encrypted communication
Config Protection	.htaccess & Directory Restriction	Prevents direct access to sensitive files
PHPMailer Authentication	Secure SMTP (TLS/SSL)	Validates mail senders
reCAPTCHA Validation	Server-side & Client-side	Prevents automated spam
Session Protection (Admin)	PHP session-based logic	Restricts admin access
Error Handling	Custom 403/404/500 pages	No sensitive data exposure
robots.txt	Search restriction for /admin/ & /private/	Prevents crawler access
Form Sanitization	trim() + htmlspecialchars()	Prevents XSS/Injection
Error Logging	mail_error.log & form_log.txt	Diagnostic trail without public exposure



SEO & Optimization Strategy

Component	Implementation	Benefit
Schema Markup	schema_org_data.html	Google Knowledge Graph
Sitemap & Robots	Properly structured	Index control & priority
Social Media	Open Graph + Twitter Cards	Social previews
Canonical URLs	All project pages	Avoids duplicate indexing
Images	Lazy-loading + compressed	Faster load times
Compression	GZIP via .htaccess	Reduces page weight
Caching	Expires headers	Faster repeat visits



Backend Workflow (Contact Form)

Data Flow Diagram



Server Response Format

```
{
  "status": "success",
  "message": "Your message has been sent successfully."
}
```



Project Pages Overview

Page	Description	Technologies
Home	Overview of career, skills, and projects	HTML, CSS, Schema
Resume	HTML + downloadable PDF/DOCX resume	HTML, File links
DEDUPE-IO	Telecom data deduplication system	HTML, JS, SEO Schema
SRT Tracker	Service Request Tracker for TTSL	Responsive HTML, FAQ Schema
Laundry System	Business automation (MS Access + PHP)	HTML, SQL, Visualization
Admin Dashboard	Backend admin utility	PHP, Session Logic
Contact Form	Secure user contact module	PHPMailer + reCAPTCHA

.htaccess Features Summary

Category	Implementation	Purpose
HTTPS Redirect	RewriteCond %{HTTPS} !=on	Forces SSL
Directory Index	Options -Indexes	Prevents folder browsing
Config Protection	<Files "config.php"> Deny from all </Files>	Sensitive file protection
MIME Types	CSS, JS, SVG definitions	Cross-browser compatibility
Compression	mod_deflate	Enables GZIP
Caching	mod_expires	Speeds up subsequent visits
Bot Protection	UA filtering	Blocks crawlers/scanners
Hotlink Protection	Referrer check	Stops asset theft
Error Pages	Custom 403/404/500 mapping	UX enhancement



Deployment & Achievements



Deployment Summary

Hosting Provider

Hostinger

Domain

arjunsingh.org

SSL Certificate

Let's Encrypt (Auto)

PHP Version

8.2

SMTP Server

smtp.hostinger.com

Analytics

Google Analytics (GA4)



Key Technical Achievements

✓ Built from Scratch

✓ No CMS Dependency

✓ Enterprise Security

✓ SEO Optimized

✓ Production Ready

✓ Fully Documented

- Built using core web technologies without CMS dependency
- Integrated multiple real-world telecom automation projects
- Applied enterprise-grade .htaccess rules for full-stack protection
- Structured data fully compliant with Google Rich Results Test
- Secure PHPMailer configuration ready for production
- Industry-standard folder hygiene using .gitignore



Business Impact & Maintenance

Business Impact

- **End-to-End Ownership:** Demonstrates complete system ownership from Frontend to Backend, Security, and SEO
- **Automation Mindset:** Reflects automation and process optimization from telecom background
- **Self-Built Architecture:** Shows capability to build complex systems without external frameworks
- **Enterprise Alignment:** Aligns with Enterprise Data & Process Automation expertise
- **Continuous Learning:** Clear evidence of modern web practices and ongoing skill development

Maintenance & Scalability

Planned Future Enhancements:

- Admin login portal with encrypted session management
- Database integration (MySQL) for tracking form submissions
- REST API endpoints for automated project updates
- Real-time analytics dashboard (GA4 or custom)
- Enhanced UI animations using GSAP or React Lite

Maintenance Schedule:

Activity	Frequency
Sitemap regeneration	Monthly
Error log review	Weekly
Security patch check	Quarterly
Content update	As required
Backup verification	Weekly








Version Control & Development

Aspect	Tool / Method	Comment
Repository	GitHub Private Repo	Source versioning
Branching	Main (Prod) + Dev (Testing)	Safe merges
Commit Strategy	Descriptive commits	Trackable history
.gitignore	Fully configured	Protects OS & env files
Local Development	WAMP/XAMPP	Offline testing
Production Deploy	Hostinger File Manager / FTP	Final deployment

Document References

- [Google Developers](#): Structured Data Guidelines
- [Apache Foundation](#): .htaccess documentation
- [PHPMailer](#): GitHub Repository
- [W3C Standards](#): HTML5 Validation
- [Hostinger Docs](#): PHP + SSL configuration

Final Summary

Category	Status
Design & UI	 Responsive, modern, consistent
Backend & Security	 Robust and hardened
SEO & Schema	 Fully optimized
Deployment	 Hostinger-ready
Documentation	 Interview-grade



Professional Certification

This documentation represents a production-grade web application built with enterprise-level standards, demonstrating comprehensive full-stack development capabilities, security best practices, and modern web technologies.





Contact Information

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Thank you 

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