



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/
    ├── index.html
    ├── resume_arjun_singh.pdf
    ├── resume_arjun_singh.docx
    → Resume Page + Downloads
    → Resume Page
    → Resume PDF for Download
    → Resume Word for Download
├── projects/
    ├── dedupe-io/index.html
    ├── srt-tracker/index.html
    └── laundry/index.html
    → Individual Project Pages
    → DEDUPE-IO Page
    → SRT Tracker Page
    → 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/
    │   ├── favicon.png
    │   ├── logo.png
    │   └── profile.png
    │   → Image for symbol of brand
    │   → Image for Log of brand
    │   → Image for Profile of brand
    ├── downloads/
    │   ├── DEDUPE_IO.zip
    │   ├── SRT_System.zip
    │   └── Technosoft_LMS.zip
    │   → DEDUPE-IO ZIP File for Download
    │   → SRT ZIP File for Download
    │   → Laundry File for Download
    ├── award/
    ├── screenshots/
    │   ├── dedupe/
    │   ├── srt/
    │   └── laundry/
    │   → All Awards and Certificated Screenshots in .png Format
    │   → All Projects Screenshots in .png Format
    │   → DEDUPE-IO Screenshots in .png Format
    │   → SRT Screenshots in .png Format
    │   → Laundry-IO Screenshots in .png Format
    → 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