

Portfolio Website Report

Alwin Madhu

Computer Engineer & Developer

October 10, 2025

1 Introduction

This report documents the development and implementation of a personal portfolio website for Alwin Madhu, a Computer Engineer and Developer. The website showcases professional projects, research, and contact information, emphasizing minimalism, clarity, and functionality. Hosted on GitHub Pages, it consists of two primary pages: the homepage (`index.html`) and the projects page (`projects.html`).

2 Project Overview

The portfolio website serves as a digital resume, highlighting Alwin Madhu's technical expertise, open-source contributions, and research. It is designed with a minimalist aesthetic, prioritizing user experience and accessibility. The website is built using HTML, CSS, and JavaScript, with no external frameworks to ensure lightweight performance.

2.1 Objectives

- Showcase key projects (SCREAM, ROSCYCLE, BlueMind) and research (Digitizing Touch).
- Provide a seamless navigation experience with smooth scrolling and a loader animation.
- Ensure responsive design for mobile and desktop devices.
- Incorporate security headers and a favicon for professional branding.

3 Website Structure

The website comprises two HTML files, each with distinct purposes:

3.1 Homepage (`index.html`)

The homepage introduces Alwin Madhu and provides an overview of his work. It includes:

- **Hero Section:** A welcoming message with a call-to-action button ("Explore My Work") linking to the Projects section.
- **About Section:** A brief bio detailing Alwin's expertise in computer engineering, AWS certification, and open-source contributions.
- **Projects Section:** Features two projects (SCREAM and ROSCYCLE) with images, descriptions, and links to GitHub repositories. A "See More Projects" button links to `projects.html`.
- **Research Section:** Highlights the "Digitizing Touch" research paper with a downloadable PDF.
- **Contact Section:** Provides email, GitHub, and LinkedIn contact information.
- **Navigation Bar:** Links to About, Projects, Research, and Contact sections within the page.

3.2 Projects Page (`projects.html`)

The projects page expands on the Projects section, listing all projects:

- **Hero Section:** Introduces the projects with a "View Projects" button linking to the projects list.

- **Projects Section:** Displays SCREAM, ROSCYCLE, and BlueMind with images, descriptions, and GitHub links. ROSCYCLE includes a live demo link.
- **Navigation Bar:** Contains a single "Back" link to return to `index.html`.

4 Key Features

- **Minimalist Design:** Uses the Outfit font from Google Fonts, a clean color palette, and subtle animations (fade-in, hover effects).
- **Responsive Layout:** Adapts to mobile and desktop screens using CSS media queries and a grid layout for project cards.
- **Loader Animation:** A spinning loader with the "#ALAVE" branding enhances the loading experience.
- **Smooth Scrolling:** JavaScript enables smooth scrolling for in-page navigation links.
- **Security Headers:** Includes Content Security Policy (CSP), X-Frame-Options, X-Content-Type-Options, and strict referrer policies.
- **Favicon:** A custom favicon (`alwin.png`) reinforces branding.
- **Section Reveal:** Sections fade in and slide up when scrolled into view, improving user engagement.

5 Project Details

5.1 SCREAM (S-C-R-E-A-M)

A text-based micro-blogging platform focused on anonymity. Users share thoughts without media or profiles, powered by a unique content algorithm.

Link: <https://github.com/alwin-m/Scream->

5.2 ROSCYCLE (R-O-S-C-Y-C-L-E)

An open-source web app for menstrual cycle tracking and PCOD symptom detection, licensed under MIT.

Links: <https://github.com/alwin-m/ROS-Cycle-Project>, <https://alwin-m.github.io/ROS-Cycle-Proj>

5.3 BlueMind - Life Timer

A single-page web app visualizing life progress based on name and birthdate, featuring a progress bar, grid, and motivational quotes.

Link: <https://github.com/alwin-m/bluemind>

5.4 Digitizing Touch with an Artificial Multimodal Fingertip

A research paper on Digit 360, an artificial fingertip with visuotactile imaging and multi-modal sensing for robotics and prosthetics.

Link: <https://raw.githubusercontent.com/alwin-m/Portfolio/main/DigitizingTouch.pdf>

6 Implementation Details

- **Technologies:** HTML, CSS, JavaScript.
- **File Structure:**
 - `index.html`: Homepage with all sections.
 - `projects.html`: Dedicated projects page.
 - `alwin.png`: Favicon.
 - `SCREAM.png`, `ROSCYCLE.png`, `BlueMind.png`, `DigitizingTouch.png`: Project and research images.
 - `DigitizingTouch.pdf`: Research paper.
- **Styling:** Inline CSS for simplicity, using CSS Grid for project layouts and media queries for responsiveness.
- **Security:** CSP restricts resources to trusted sources; `rel="noopener noreferrer"` on external links prevents security risks.

7 Deployment Instructions

The website is hosted on GitHub Pages under the repository <https://github.com/alwin-m/Portfolio>.

1. Upload all files (`index.html`, `projects.html`, `alwin.png`, `SCREAM.png`, `ROSCYCLE.png`, `BlueMind.png`, `DigitizingTouch.png`, `DigitizingTouch.pdf`) to the main branch.
2. Enable GitHub Pages in the repository settings, selecting the main branch and root directory.
3. Access the website at <https://alwin-m.github.io/Portfolio/>.
4. Verify that the favicon and images load correctly using raw URLs (e.g., <https://raw.githubusercontent.com/alwin-m/Portfolio/main/alwin.png>).

8 Conclusion

The portfolio website effectively showcases Alwin Madhu's professional achievements with a clean, user-friendly design. The integration of `index.html` and `projects.html` provides a comprehensive view of projects and research, while the minimalist aesthetic and responsive design ensure accessibility across devices. Future enhancements may include additional projects or interactive features as needed.