

Project 2: Bootstrap 5.x Professional Portfolio Website

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Design Process

Planning & Research

The development of my portfolio website began with meticulous planning and research to ensure that the final product not only met my professional objectives but also provided an engaging and intuitive user experience. My primary goal was to create a platform that effectively communicates my personal brand, skills, experiences, and projects in a way that resonates with my target audience. This audience includes potential collaborators, employers, and individuals who might be interested in connecting with me professionally.

To start, I defined the key objectives of the website: it needed to reflect my personality while maintaining a professional tone, highlight my achievements and capabilities, and provide an easy way for users to navigate and interact with my content. With these goals in mind, I conducted thorough research into existing portfolio websites. This research involved analyzing popular layouts, colour schemes, typography choices, and interactive elements that effectively capture attention and guide users. I focused on websites from designers, developers, and other professionals in creative industries to identify best practices and elements that stood out. I also considered usability and accessibility standards, ensuring that my website would cater to a broad audience, including users with disabilities. This influenced my decisions regarding navigation, contrast, and interactive elements, ensuring a balance between creativity and inclusivity.

In the end, I opted for a clean, single-page structure, as this layout aligns with modern design trends and is highly effective for showcasing key information without overwhelming the user. The single-page design provides a seamless browsing experience, enabling visitors to scroll through my content intuitively. Additionally, I selected a minimalistic style with a

focus on whitespace and clear content hierarchy, which helps to highlight the most important information.

The colour scheme was deliberately kept simple yet impactful. I chose a palette of black, white, and blue (#0073E6), where black and white create a timeless and professional base, and blue adds a subtle pop of colour that conveys my personality and creativity. The shade of blue was specifically chosen for its calming and subtle yet dynamic properties, making it ideal for a professional portfolio, as well as making it more accessible to all users. For rich media assets, I incorporated photographs that I have personally taken over the years. These images not only present my creativity but also bring a personal touch to the site, making it more authentic and relatable.

These steps not only helped me clarify my vision for the website but also ensured that every design and coding decision was purposeful and aligned with my goals. The result is a platform that is visually appealing, user-friendly, and reflective of my personal and professional identity.

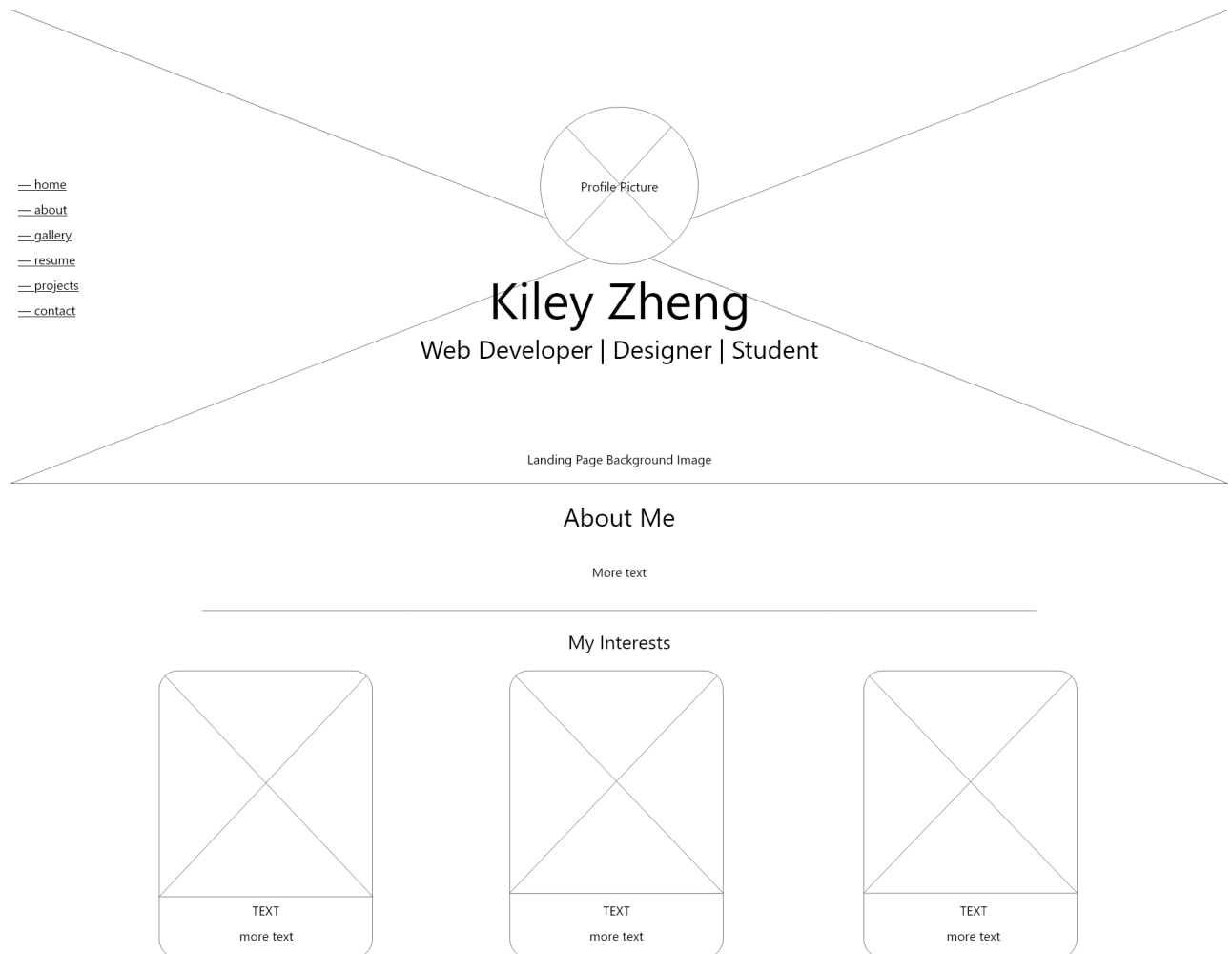
Wireframes & Layout

[Link to Wireframes](#)

For the wireframing and layout process of my website, I focused on creating a simple, modern design that effectively showcases my personal branding and most importantly the content. For the desktop version, I placed the navigation vertically on the left side of the screen. This decision stemmed from a desire to create a unique and visually distinct design, setting my portfolio apart from the conventional top-navigation layouts. The vertical navigation not only adds a creative touch but also enhances accessibility by keeping the links

consistently visible as users scroll through the page, as all the information and navigation is on one webpage.

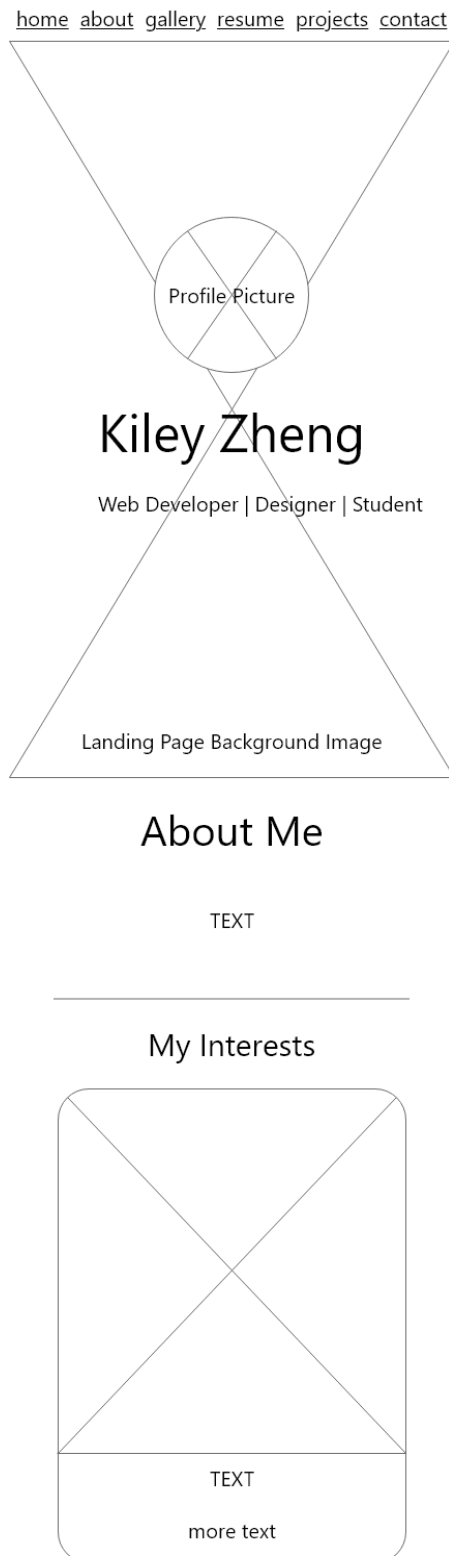
Web Version of Homepage



However, for the mobile version, I opted to move the navigation to the top in a horizontal layout. This change was driven by the need to optimize screen space and improve usability on smaller devices. A side navigation on mobile could obstruct content and complicate navigation, while a top, horizontal navigation menu ensures a clean and

clutter-free interface. This responsive design decision balances aesthetic appeal with functionality across different screen sizes.

Mobile Version of Homepage



For the homepage wireframes, I concentrated on visually highlighting my profile with a hero section that features a large background image, a centred profile picture, and a clear introduction of my name and titles. Below this, the "About Me" section introduces text content, followed by an "Interests" section with neatly aligned cards to ensure visual hierarchy and easy readability. These decisions ensure the homepage leaves a strong first impression, effectively communicating my personality and skills.

Templates/Components

I used a variety of Bootstrap 5 components to ensure a responsive, professional, and visually appealing design. The navigation bar is one of the standout elements, with a vertical layout for desktops using `d-flex` and `flex-column`, and a dropdown menu for mobile devices to save space and improve usability. The Bootstrap grid system (`container`, `row`, `col`) was foundational in structuring sections like "About Me" and "My Interests," enabling a responsive layout that adjusts from stacked columns on small devices to a three-column layout on larger screens. Cards (`.card`) were used in the "My Interests" section to organize content with images and text cleanly, while progress bars (`.progress`) in the "Skills" section visually represented proficiency levels. For the "Photo Gallery," the carousel component (`.carousel`) added an interactive image slider with indicators and controls. Accordions (`.accordion`) were employed to present information in a compact and expandable format in sections like "Education" and "Experience." Buttons (`.btn`) were styled with `btn-outline-dark` and `btn-outline-light` for actions such as linking the resume PDF and submitting forms, and modals (`.modal`) enhanced user interaction for form verification and scheduling meetings. Typography classes like `display-5`, `fw-bold`, and `lead` improved text readability and hierarchy. Bootstrap's utility classes (`text-center`, `justify-content-center`, and more) allowed for further customization, making the site polished and user-friendly across all devices.

Small Responsive Design Breakpoints

In my website design, I utilized small responsive design breakpoints to enhance the website's usability and visual appearance across various screen sizes. These breakpoints allowed me to adapt the layout, typography, and navigation effectively for smaller devices such as smartphones and tablets.

One key example is the navigation bar. For larger screens, I opted for a vertical navigation bar on the side, which I found unique and visually appealing, giving the desktop version a distinct look. However, for smaller screens, this approach could have interfered with the content and usability. To address this, I incorporated a breakpoint using media queries (specifically `@media (max-width: 440px)`), transforming the vertical navigation into a horizontal dropdown menu at the top of the screen. This change ensures the navigation remains accessible while conserving space on smaller screens.

Similarly, responsive adjustments were applied to the grid layout in the "My Interests" section. For smaller devices, I used breakpoints to stack the cards vertically (col-12 for single-column display) while maintaining a multi-column layout (col-sm-6, col-md-4) for larger screens. This approach improved readability and ensured that the layout did not feel cramped on mobile devices.

Overall, the responsive design breakpoints were thoughtfully chosen to prioritize ease of navigation, content clarity, and a seamless user experience across all device sizes. By leveraging these small breakpoints, I made the site adaptable and aesthetically pleasing for a diverse audience.

Usability and Accessibility Principles (WCAG 2.0)

My website incorporates various usability and accessibility principles aligned with WCAG 2.0 standards to ensure an inclusive and user-friendly experience for all visitors. A

significant focus has been placed on implementing semantic HTML elements, ARIA attributes, and other best practices to enhance accessibility.

ARIA (Accessible Rich Internet Applications) labels have been carefully added to enhance accessibility further. For instance, the telephone link includes `aria-label="Call this number: +1 (778)-987-9656"`, providing screen readers with descriptive information about the link's purpose. Similarly, the email link uses `aria-label="Email Kiley"` to ensure that users understand what action the link will trigger. Elements with icons, such as phone and location markers, are supplemented with ARIA attributes and hidden screen reader text (via `sr-only`) to convey their meaning. This practice ensures that non-visual users receive the same information as visual users.

Perceivable

1.1.1 Non-text Content

I have ensured that all non-text elements are accessible to users who rely on assistive technologies. I provided meaningful text alternatives for all non-text content, such as images, icons, and video elements.

1.3.1 Info and Relationships

I have ensured that all my content and structure are programmatically determinable and visually meaningful for all users, including those relying on assistive technologies. I achieved this by using semantic HTML elements, such as `<header>`, `<nav>`, `<section>`, and `<footer>`, to define the structure of the website. For example, I wrapped the navigation links in a `<nav>` element, signalling its role as the website's primary navigation. Similarly, I used `<h1>`, `<h2>`, and `<h3>` tags to create a clear heading hierarchy, making it easier for screen readers and assistive tools to parse the content.

Furthermore, the relationships between the form elements and their labels were established through <label> elements tied to input fields via the *for* attribute, ensuring that form fields are accessible to users with screen readers. The use of ARIA roles and properties, such as `aria-label` and `aria-labelledby`, further enhances accessibility by explicitly describing the purpose of certain interactive components, such as buttons or modals. By maintaining a logical document flow and visually reinforcing relationships through spacing and styling, I ensured it was more accessible and user-friendly for all audiences.

1.3.2 Meaningful Sequence

All content and structure are presented in a logical, sequential order that preserves meaning and usability. For instance, the HTML code follows a top-to-bottom hierarchy, starting with the navigation bar, then the hero section, followed by sections like "About Me," "Gallery," and "Contact." This logical order ensures that users navigating with assistive technologies, like screen readers, experience the content in a meaningful sequence that matches its visual presentation.

1.4.1 Use of Color

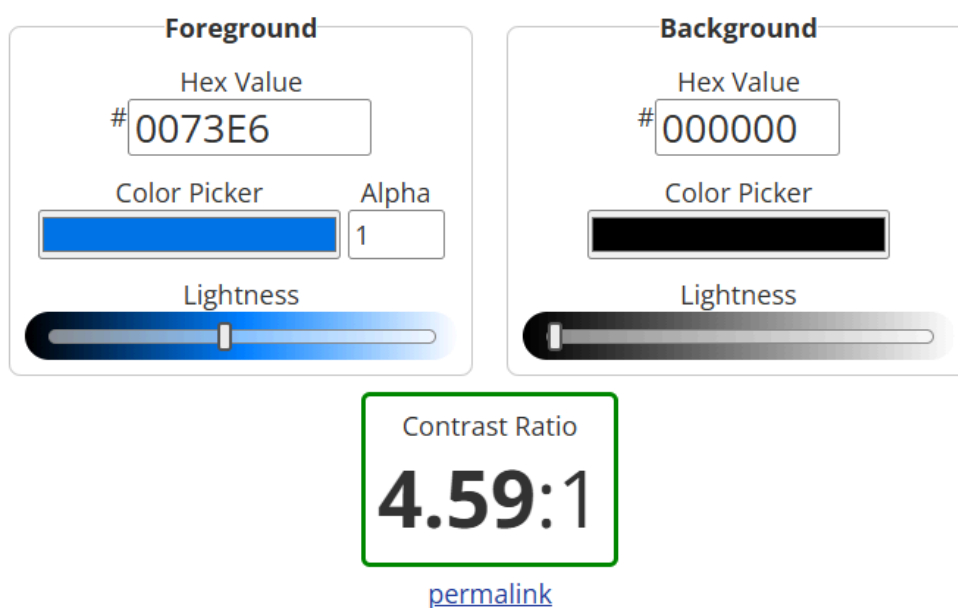
I ensured that color is not the sole means of conveying information. For example, links and buttons are accompanied by text or labels, and hover effects provide additional visual feedback, ensuring accessibility for users with colour vision deficiencies.

1.4.3 Contrast (Minimum), 1.4.6 Contrast (Enhanced)

WebAIM Contrast Checker

Using the WebAIM Contrast Checker tool, I tested the blue colour #0073E6 used in the navigation against both white (#FFFFFF) and black (#000000) backgrounds to evaluate

its adherence to WCAG 2.0 standards for colour contrast. The contrast ratio achieved is 4.57:1 on a white background and 4.59:1 on a black background, which meets WCAG AA standards for normal text but falls short of WCAG AAA standards. For large text and graphical elements, the colour passes both WCAG AA and AAA requirements, ensuring accessibility for larger fonts and interactive components. This testing confirms that the blue colour provides sufficient readability for most users, but adjustments may be necessary for strict adherence to AAA standards for smaller text sizes.



Normal Text

WCAG AA: **Pass**
 WCAG AAA: **Fail**

The five boxing wizards jump quickly.

Large Text

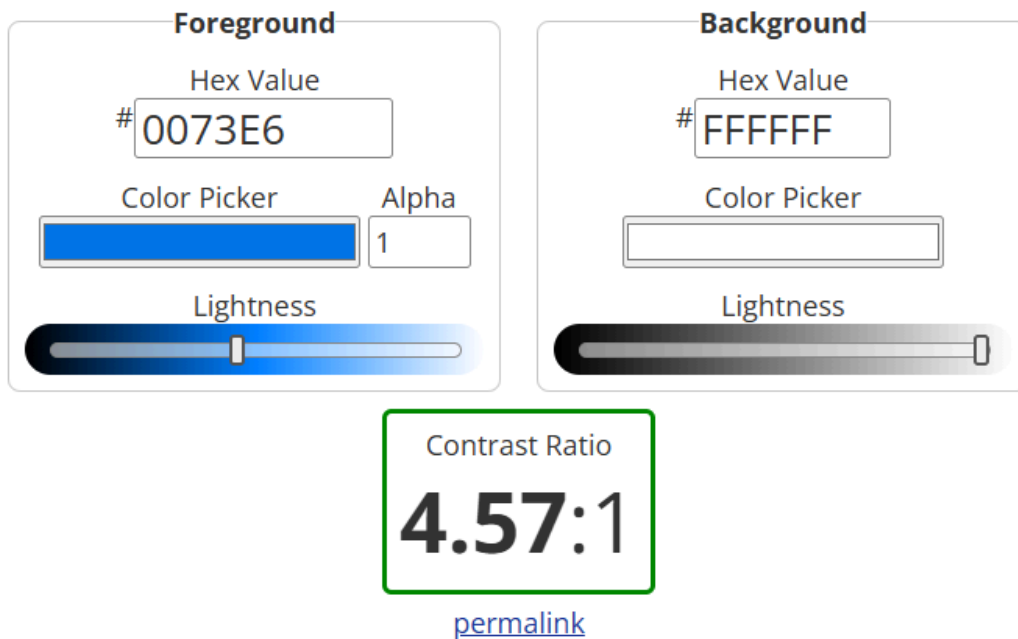
WCAG AA: **Pass**
 WCAG AAA: **Pass**

The five boxing wizards jump quickly.

Graphical Objects and User Interface Components

WCAG AA: **Pass**





Normal Text

WCAG AA: **Pass**

WCAG AAA: **Fail**

The five boxing wizards jump quickly.

Large Text

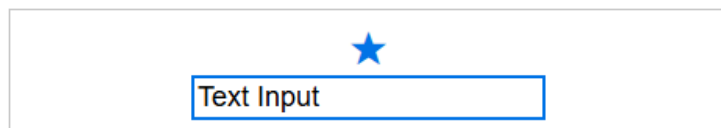
WCAG AA: **Pass**

WCAG AAA: **Pass**

The five boxing wizards jump quickly.

Graphical Objects and User Interface Components

WCAG AA: **Pass**



1.4.5 Images of Text

My website uses actual text instead of images of text to convey information throughout the site. For example, headings, navigation links, and content such as "About Me" and "Contact" are implemented as text rather than embedded images.

1.4.7 Low or No Background Audio

There is no background audio or noise.

Operable

2.1.1 Keyboard Accessible

All interactive elements, such as navigation links, buttons, and form inputs, are fully operable using a keyboard alone. Users can navigate through the website using the Tab key to move between elements and Enter or Space to activate them, without requiring a mouse. This ensures accessibility for users with mobility impairments or those who prefer keyboard navigation.

2.1.3 Keyboard (No Exception)

The website is operable through a keyboard interface without requiring specific timings for individual keystrokes.

2.2.2 Pause, Stop, Hide

In my navigation, the scrolling occurs as a result of the user clicking on a link and does not persist beyond the intended interaction, making it user-initiated, not automatic, therefore adhering to this guideline.

2.3.1 Three Flashes or Below Threshold, 2.3.2 Three Flashes

There is nothing on my website that contains flashes more than three times in any one-second period.

2.4.2 Page Titled

I have ensured that each page has a unique and descriptive title, providing users with clear context about the content of each page and helping them easily identify the purpose of the page when browsing.

2.4.3 Focus Order

All interactive elements on the website, such as navigation links, buttons, and form fields, follow a logical and predictable tabbing sequence. The focus order matches the visual structure of the page, beginning with the navigation bar and progressing through sections like "About Me," "Gallery," and "Contact." Using native HTML and Bootstrap components ensures proper focus management, allowing keyboard users to navigate seamlessly without encountering hidden or inaccessible elements.

2.4.4 Link Purpose (In Context)

I provided clear, descriptive links such as "home," "about," "gallery," and "contact," which accurately convey their purpose in context. Additionally, links like those in the "Recent Work" section are paired with concise descriptions and tooltips, ensuring users understand the purpose of each link without requiring additional context.

2.4.5 Multiple Ways

I provided multiple navigation options, including a vertical navigation menu, section-specific links, and quick links to all navigation links.

2.4.6 Headings and Labels

I have used clear, descriptive headings and labels to organize all content effectively.

2.4.9 Link Purpose (Link Only)

Each link's text clearly describes its purpose, making it accessible and understandable even when read out of context by assistive technologies.

2.4.10 Section Headings

I have properly used section headings to describe and organize content.

Understandable

3.1.1 Language of Page

I specified the primary language as English using the lang="en" attribute in the <html> tag, ensuring compatibility with assistive technologies.

3.1.5 Reading Level

Content is presented in clear, concise language suitable for a wide audience, ensuring accessibility for users with varying literacy levels.

3.2.1 On Focus

No unexpected changes occur when elements, such as navigation links or form fields, receive focus, maintaining a predictable and user-friendly experience.

3.2.3 Consistent Navigation

I used a fixed navigation bar on both the desktop and mobile versions, ensuring users can easily access key sections of the site from any page without changes to the navigation structure.

3.2.4 Consistent Identification

I used consistent icons, labels, and design patterns across all pages to ensure users can easily recognize and interact with elements throughout the site.

3.3.2 Labels or Instructions

Clear labels and placeholders for form fields, such as "Name," "Email Address," and "Message," ensuring users understand the required input and can complete forms accurately.

Robust

4.1.1 Parsing

I have ensured that all HTML elements are properly structured. Each element in my code has both start and end tags. This well-formed and structured HTML code ensures that the content is correctly interpreted by both browsers and assistive technologies, improving accessibility for all users.