

Israel Garcia Real

Report: How I Used Bootstrap 5
Web Site Development/ Outi Grotenfelt,
Arvind Sharma

Laurea University of Applied Sciences

29th of December 2025

How I Used Bootstrap 5

Table of Contents

1	Which Bootstrap 5 components and examples were used, and why?.....	3
2	How was the layout structured using the grid system?.....	4
3	Was any custom CSS used, and what was its purpose?	4
4	Were any challenges faced, and how were they solved?	5
5	Were there any other learning points?	5
6	Conclusions	6
	References	7

1 Which Bootstrap 5 components and examples were used, and why?

♦ **Navbar** (*navbar-expand-md, sticky-top, collapse/toggler*)

Used to provide clear site navigation (About, Hobbies, Skills, Contact) and to stay accessible while scrolling. The collapsible menu improves usability on mobile.

♦ **Grid system** (*container, row, col-**)

Used to create a responsive structure that adapts across screen sizes (desktop/tablet/mobile) without needing separate pages.

♦ **Cards** (*card / card-body*)

Used in the Skills section to present content in clean, consistent blocks (Front-end, Tools, Cloud & Platforms, Creative tools).

♦ **Badges** (*badge, rounded-pill*)

Used for quick labels like “Bootstrap 5 + Custom CSS” and small visual highlights without heavy layout complexity.

♦ **Progress bars** (*progress, progress-bar*)

Used to visualize skill levels in a clear, familiar UI pattern.

♦ **Carousel** (*carousel, carousel-inner, carousel-item, controls*)

Used in Testimonials to show multiple testimonials in the same space and practice a real Bootstrap component that includes JS behaviour.

♦ **Forms** (*form-control, form-label, button*)

Used in Contact to create a structured contact form layout with consistent styling.

♦ **Alerts** (*alert alert-secondary*)

Used for “Note / disclaimer” boxes (skills note, contact note) to highlight important information in a recognizable style.

♦ **Bootstrap Icons** (*bi ...*)

Used to add recognizable logos (GitHub, LinkedIn, YouTube, email icons) and improve visual communication.

2 How was the layout structured using the grid system?

- The site is wrapped with Bootstrap containers (e.g., container mt-5) to control maximum width and centre content.
- Each section uses rows to group content (row mb-5) and provide vertical spacing.
- Content inside rows is split using responsive columns, for example:
 - I. About section: text + buttons in one column and the profile image in another using col-12 col-lg-8 and col-12 col-lg-4 (stacks on mobile, side-by-side on large screens).
 - II. Contact section: col-12 col-md-5 for the left info/social links and col-12 col-md-7 for the form (stacks on mobile, two-column on desktop).
 - III. Skills section: a multi-card layout using column sizes like col-12 col-md-4 so cards stack on mobile and align in a row on larger screens.
- This approach ensured the same HTML works for all device sizes, with Bootstrap handling the responsive breakpoints.

3 Was any custom CSS used, and what was its purpose?

Yes. Custom CSS was used mainly to support the dark theme and match the portfolio's visual identity:

a) Wallpaper background + dark overlay styling

A custom background image was applied, and section "glass" cards were styled for readability.

b) Custom "section-card" style

To create a consistent dark translucent card, look across sections (About, Skills, Contact, Testimonials).

c) Icon styling and hover effects

Custom rules-controlled icon size, hover colour changes (e.g., GitHub purple, LinkedIn blue, YouTube red), and removed unwanted white hover backgrounds.

d) Progress bar + note box theming

Overrode default Bootstrap light backgrounds so progress tracks and alert boxes fit the dark theme.

e) Small responsiveness tweaks

Some custom rules improved spacing/typography on small screens to reduce “dense” paragraphs and make the layout easier to read, (hero card, e.g.).

4 Were any challenges faced, and how were they solved?

Yes, several practical issues came up:

a) Navbar disappearing / not updating with translations.

Fixed by ensuring navbar items used data-i18n keys and adding missing translation keys inside the translations object.

b) Icons not showing.

Solved by correctly linking Bootstrap Icons in the <head> and using the correct bi bi-... classes.

c) Testimonials carousel controls disappearing / content vanishing.

This was caused by incorrect nesting/placement of the carousel buttons and structure. Fixed by moving the prev/next buttons outside .carousel-inner but still inside the .carousel container, matching Bootstrap’s required structure.

d) Hover effects “not working”.

On desktop it worked but felt inconsistent depending on where the mouse was. Solved by increasing the hover target area and adjusting styling so the effect was more noticeable.

e) Layout breaking (form dropping under the contact text).

Usually caused by column structure being interrupted by extra divs. Fixed by ensuring the email block and social links stayed inside the left column only, and the form stayed inside the right column (col-md-7).

f) Translations for placeholders and disclaimers.

Text content worked, but placeholders needed a separate handler. Solved by adding a second loop for [data-i18n-placeholder] inside setLanguage().

5 Were there any other learning points?

1. Responsive design is easier when you trust the grid

Using col-12 + breakpoint columns (like col-md-*, col-lg-*) prevents needing separate mobile layouts.

II. Bootstrap components require correct structure.

The carousel issue showed that even small nesting mistakes can break component behaviour.

III. Custom CSS should be targeted, not global.

Targeting only inside sections like #contact ... prevented unwanted side effects elsewhere.

IV. Internationalization needs planning.

Using data-i18n keys works well, but you must remember to add every new piece of text (including disclaimers and footer) into the translations object.

V. Dark theme requires contrast checks.

Light defaults (alerts, progress tracks, form inputs) often need overrides to stay readable on dark backgrounds.

6 Conclusions

Sustainability considerations influenced the design choices in this assignment, particularly the decision to adopt a dark-first theme. In addition to improving visual comfort, the dark theme reflects an awareness of energy efficiency and long-term usability, aligning the project with personal values related to responsible and sustainable digital design.

This assignment allowed me to apply Bootstrap 5 in a practical way to design a responsive and structured portfolio website. By using the grid system, containers, rows, columns, and several Bootstrap components such as cards, forms, progress bars, and a carousel, I was able to build a layout that adapts well across different screen sizes while keeping the code organized and readable. Custom CSS was used mainly to support the dark theme, improve readability, and personalize the visual identity without replacing Bootstrap's core layout system.

In addition to the required features, I implemented a simple JavaScript-based language translation system to support English, Finnish, and Spanish. Although this was not required by the assignment, it was added to make the project more reusable for my future professional portfolio. The translation system uses data-i18n attributes and JavaScript to dynamically update content and placeholders, helping me

better understand how HTML, CSS, and JavaScript can work together in a real project.

One of the main challenges during development was maintaining the correct HTML structure, especially keeping track of opening and closing tags within the Bootstrap grid system. Small mistakes, such as missing or misplaced closing tags, often caused layout issues like columns breaking or sections shifting unexpectedly. These challenges highlighted the importance of careful code organization and attention to detail when working with nested rows and columns. Overall, this project strengthened my understanding of responsive design, component-based development, and the importance of clean structure in front-end development. This is something that I really enjoyed doing.

References

Bootstrap. 2024. *Bootstrap 5 Documentation*. Accessed 16 December 2025.

<https://getbootstrap.com/docs/5.3/>

Bootstrap Icons. 2024. *Bootstrap Icons Documentation*. Accessed 16 December 2025.

<https://icons.getbootstrap.com/>

Codecademy. 2024. *Learn HTML & CSS Courses*. Accessed 14 November 2025.

<https://www.codecademy.com/>

Module 3: Bootstrap. 2025. Web Site Development ND00CC68-3001 Course. Laurea University of Applied Sciences, Espoo. Accessed 16 December 2025.

Rowe, Liz. 2023. [Online video] *What is Bootstrap? / Beginner CSS Framework*. Accessed 16 December 2025. YouTube. <https://youtu.be/MyCvTSjkD74>

W3Schools. 2024. *Bootstrap 5 Tutorial*. Accessed 16 December 2025.

<https://www.w3schools.com/bootstrap5/>