

# Karolina Balszan

London, UK | kbalszan@gmail.com | balszan.dev | github.com/balszan

## TECHNICAL SKILLS

**Languages:** JavaScript, Java, Python, SQL

**Frameworks & Libraries:** React, Node.js, Express.js, Next.js, Spring Boot

**Databases:** MongoDB

**Developer Tools:** Git, VS Code, IntelliJ

**Other:** HTML, CSS, Tailwind CSS, Zustand, Webpack, RabbitMQ

## EDUCATION

**University of West London**

BSc Computer Science (*First Class Honours*)

London, UK

May 2024

## COURSEWORK

**Parallel Processing in Microservices Architecture** | *Java, Spring Boot, RabbitMQ*

Grade: 83%

- Designed and implemented **microservices** architecture for final year project using **Spring Boot**, **Java**, and **RabbitMQ** to process large-scale order data, integrating LMAX Disruptor for parallel processing and achieving 77.49% reduction in processing time for volumes up to 10 million orders
- Conducted comprehensive performance analysis, measuring processing times across order volumes from 10,000 to 10 million, resulting in consistent improvements in both individual microservices and end-to-end processing

**Team Leader: E-commerce Website Development** | *Shopify*

Grade: 77%

- Led a 5-person cross-functional team in developing a e-commerce platform, implementing agile methodologies with weekly sprints to manage UX design, back-end development, and QA processes, ensuring on-time project delivery

**Applied Software Engineering** | *Java*

Grade: 80%

- Developed a back-end application for a knowledge management system using **Java**, implementing a modular architecture and object-oriented design principles to enable easy system expansion and maintenance
- Implemented comprehensive unit testing using **JUnit** within a test-driven development (**TDD**) framework, leading to reduced debugging time during later development stages and improved code maintainability

**Databases and Analytics** | *Python, SQL, MongoDB*

Grade: 69%

- Designed and implemented **MongoDB** schemas for NoSQL applications, performing CRUD operations. Utilized **SQL**, **Python** (**NumPy**, **Pandas**), and **R** to analyze datasets and improve data efficiency

## PROJECTS

**FoodShop** | *JavaScript, React.js, Next.js, Tailwind CSS, Zustand, Stripe API*

foodshop.balszan.dev

- Developed and deployed a full-stack e-commerce application using **React** and **Next.js**, combining frontend and backend functionality
- Implemented state management with **Zustand** and integrated **Stripe API** for secure payments
- Created a dynamic cart system and responsive design using **Tailwind CSS**, optimising cross-browser compatibility and performance across various devices
- Applied best practices including server-side rendering and client-side state management, enhancing application performance and SEO

**BirdCheck** | *HTML, CSS, JavaScript, React.js*

birdcheck.netlify.app

- Developed and deployed a **React**-based application fetching and displaying recent UK bird sightings using eBird and Flickr **APIs** to create comprehensive user interface
- Implemented interactive Leaflet maps to visualise bird spotting locations
- Utilised localStorage for persistent storage of user data, allowing seamless user experience across sessions
- Ensured W3C validation standards and incorporated accessibility best practices, improving user inclusivity and compliance

**Portfolio Website** | *HTML, CSS, JavaScript*

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- Designed, developed and deployed a personal portfolio website using **HTML**, **CSS**, and **JavaScript**, implementing responsive design for cross-device compatibility
- Enhanced user experience with custom **JavaScript** animations and optimised performance through efficient code practices, improving site responsiveness and load times