**Frontend**

**[Personal Website](https://github.com/busycaesar/busycaesar.github.io)**

* Developed a responsive website using Next.js and Firebase, showcasing my portfolio and skills.

**[Seneca Hackathon Website](https://github.com/busycaesar/SenecaHackathon2024)**

* Created a responsive marketing website for Seneca Hackathon 2024 using React.js to engage participants.

**[IntelliCycles](https://github.com/busycaesar/IntelliCycles)**

* Built a task management web application with React.js, Node.js, and PostgreSQL, featuring a calendar view, chatbot assistance, and a motivating streak system.

**Cloud**

[**Introductory AWS Cloud Project**](https://github.com/busycaesar/Introductory_AWS_Cloud_Project)

* Developed a microservice to store, retrieve, and manage data for IoT devices, utilizing AWS Cognito for secure authentication.
* Implemented CI/CD pipelines with GitHub Actions, Docker, and Amazon ECS for automated testing, deployment, and seamless integration of updates.

[**Azure Load Balancer Setup**](https://www.youtube.com/watch?v=t93d8ieZn0Q)

* Configured load balancing for web applications using Microsoft Azure services, including VMs, Virtual Networks, Load Balancers, and Private DNS to enhance performance and reliability.

**RAG Apps**

**[“RAG Explained” Blog series](https://dev.to/busycaesar/series/29180)**

* Authored a blog series explaining key concepts of Retrieval-Augmented Generation (RAG), including data ingestion, embedding generation, indexing, vector databases, and prompt templates.
* Explored advanced topics such as LangChain, LlamaIndex, and fine-tuning, providing insights into how these components work together to enhance AI performance.

[**Content Driven LLM APIs**](https://github.com/busycaesar/Content_Driven_LLM_APIs)

* Built an application using Node.js, Express.js, and PostgreSQL, providing RESTful APIs for content-driven LLM prompting.
* Enables developers to store and manage content and generate LLM-based responses, simplifying AI integration in existing projects, without requiring deep knowledge of AI Agent frameworks.

[**LLM Middleware API**](https://github.com/busycaesar/LLM_Middleware_API)

* Developed a Docker image with Node.js and Express.js, providing APIs for seamless LLM interaction, reducing development effort by 70%.

**Backend**

[**Auth APIs**](https://github.com/busycaesar/Auth_APIs)

* Engineered a web service using Node.js, Express.js, and PostgreSQL to streamline user authentication, featuring secure management and JWT handling endpoints, decreasing development time by 10%.

**Bash Scripting**

**[Nodejs Project Scripts](https://github.com/busycaesar/Nodejs_Project_Scripts)**

* Automated Node.js project tasks using Bash scripts, including project initialization and database integration, saving developers 20-30% of their time.

[**Interactive Shell Resume**](https://github.com/busycaesar/Terminal_Resume/tree/Master/interactive)

* Created an interactive Bash-based experience to explore my professional background, including education, skills, projects, and contact information.

**Java**

**[Hotel Reservation System](https://github.com/busycaesar/Hotel_Reservation_System)**

* Engineered a user-friendly hotel booking system with Java, FXML, and SQLite, following MVC architecture, featuring an admin panel for reservations, availability, and discounts.

[**Inventory Management System**](https://github.com/busycaesar/Inventory_Management_System)

* Developed an inventory management system with Java and FXML, following MVC architecture, for managing parts and products, offering data storage and retrieval options.

[**Auto Loan Application**](https://github.com/busycaesar/Auto_Loan_Application)

* Built a Java and FXML application, following MVC architecture, to calculate repayment amounts for vehicle loans based on specified intervals.

**C++**

**[C++ Projects](https://github.com/busycaesar/Learning_CPP_2)**

* Completed a series of C++ projects to enhance Object-Oriented Programming skills, focusing on algorithms, design patterns, and real-world applications.

**[CLI Library Application](https://github.com/busycaesar/Library_Application)**

* Developed a CLI application, using C++, to manage a library efficiently.
* Enabled users to add, remove, check out, and return publications while ensuring data updates as needed.

**Mobile Development**

[**C# Mobile Dev Projects**](https://github.com/busycaesar/Xamarin_Projects)

* Developed a collection of C# mobile apps to enhance mobile development skills, covering algorithms, design patterns, and real-world applications.

**[Utility Bills Calculator](https://github.com/busycaesar/Xamarin_Projects/tree/Master/Utility%20Bills)**

* Created a cross platform mobile application, using C# and Xamarin, to collect information on electrical consumption and the user's province to calculate applicable taxes.
* Included fields for daytime and evening electricity usage and checked for environmental rebates based on renewable energy use.
* Provided a clear and efficient way to compute total charges, helping users understand their electricity costs.

[**Ionic Projects**](https://github.com/busycaesar/Ionic_Projects)

* Created various projects while learning cross-platform app development with Ionic and Angular, highlighting mobile application development techniques.

**[Library Application](https://github.com/busycaesar/Xamarin_Projects/tree/Master/Library%20Application)**

* Developed a user-friendly library mobile app, using C# and Xamarin, that simplifies book borrowing and returning with secure login and easy book management for members.

**Web Scrapping**

[**Laundry Machine Status**](https://github.com/busycaesar/Laundry_Machine_Status)

* Developed a web scraper that fetches and displays the availability of washers and dryers and current laundry card balance.

[**Pay Slip Scrapper**](https://github.com/busycaesar/Pay_Slip_Scrapper)

* Built a web scraper that logs into a company's website to download the latest pay slip automatically.

**Robot/IoT/Embedded Systems/Electronics**

**[Autonomous Navigation](https://github.com/busycaesar/RobotC_Projects/tree/Master/Autonomous%20course%20navigation)**

* Engineered a RobotC project where a robot navigates autonomously using sensors to analyze the environment and find the correct path.
* Created RobotC code that enables a robot to autonomously navigate a predefined course.
* Used sensors to measure and analyze environmental values, allowing the robot to determine its path.
* Adjusted the direction at each step to successfully reach the destination, handling various course layouts.

**[Multi-Sensor Path Detection](https://github.com/busycaesar/RobotC_Projects/tree/Master/Multi-Sensor%20path%20detection)**

* Created a RobotC project where a robot follows a black line using tracking sensors, smoothly decelerating upon detecting a wall to stop gradually.
* Developed RobotC code that enables a robot to autonomously follow a black line on a map using line-tracking sensors.
* Adjusted the robot's movement continuously to stay aligned with the line.
* Initiated a controlled deceleration upon reaching the end of the line to ensure a smooth stop.