



CampusCast

An IoT-Based Announcement System



Introduction

Welcome to **CampusCast**, an IoT-based announcement system that offers a modern and efficient solution for communication within academic institutions. With this system, college authorities can easily send voice announcements with customizable routes to specific classrooms, branches, years, or classes. **CampusCast** helps save time and resources by providing a targeted and timely communication channel, while also keeping students and faculty informed about important updates and events.





Problem Statement

1. In many colleges, teachers send announcements or important messages through WhatsApp groups while students are attending classes. However, it can be difficult for students to check their smartphones and receive timely notifications while in class.
2. Some students rely on hostel WiFi to access WhatsApp messages, but many colleges do not provide WiFi on campus, making it challenging for students to stay connected and receive important updates.
3. During exams, the bell system often favors regular classes, leaving students taking exams without proper time alerts. Even if they have smartwatches, these devices are not allowed in classrooms.

Our Solution: CampusCast

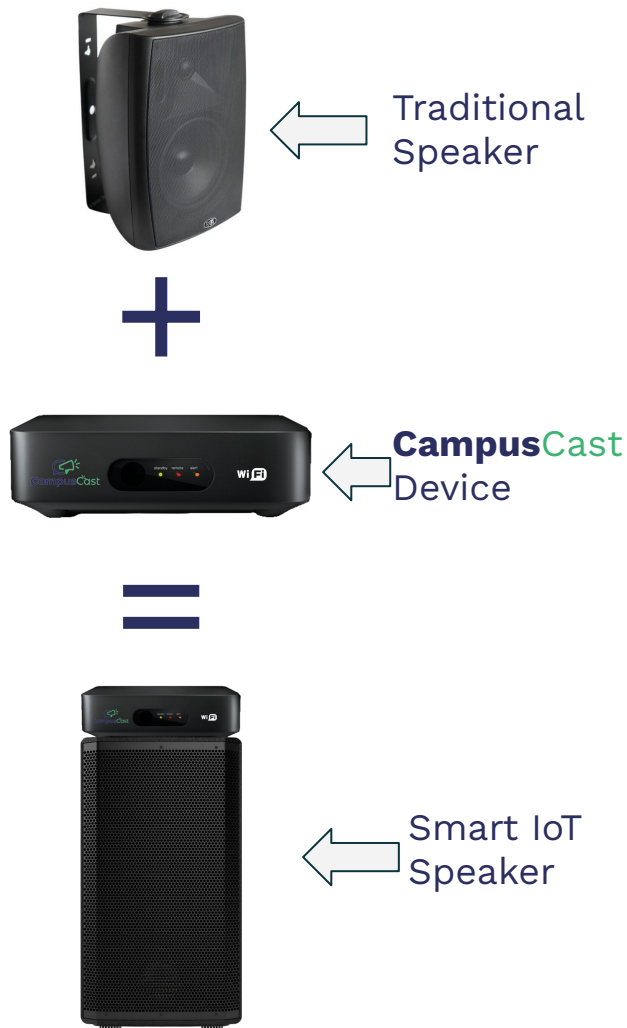
Revolutionizing Campus Communication

- **CampusCast** is an IoT-based announcement system that revolutionizes campus communication by providing a smart and efficient way for teachers and students to stay connected.
- With **CampusCast**, teachers can send announcements, reminders, and important messages to students instantly through a centralized system that ensures every message is received and acknowledged.
- **CampusCast** provides a feature called "Smart Notification" that ensures students receive important messages at the right time, without interrupting their class activities. This feature allows students to receive notifications via a smart speaker, without having to check their smartphones.

Our Solution: CampusCast

Revolutionizing Campus Communication

- **CampusCast** also provides a feature called "Exam Time Alerts" that sends notifications to students attending exams, ensuring they are informed about exam times. This feature helps to eliminate the need for the traditional bell system, which can be disruptive to exam-taking students.
- With **CampusCast**, students can also receive messages and announcements even if they don't have access to Wi-Fi on campus. The system uses IoT technology that ensures messages are delivered with the acknowledgement.
- **CampusCast** is easy to use and user-friendly, allowing you to send announcements quickly and easily, similar to sending a snap on the Snapchat app.

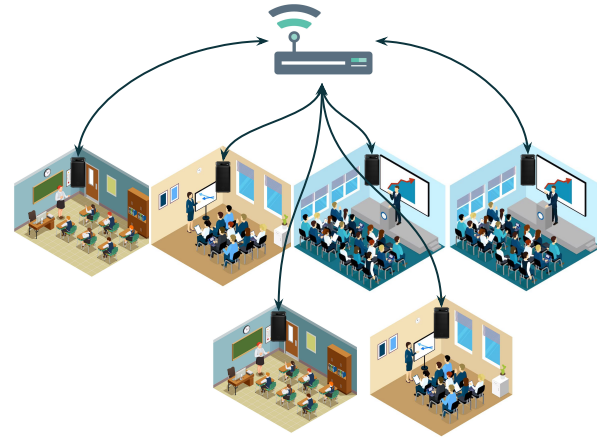


Hardware System

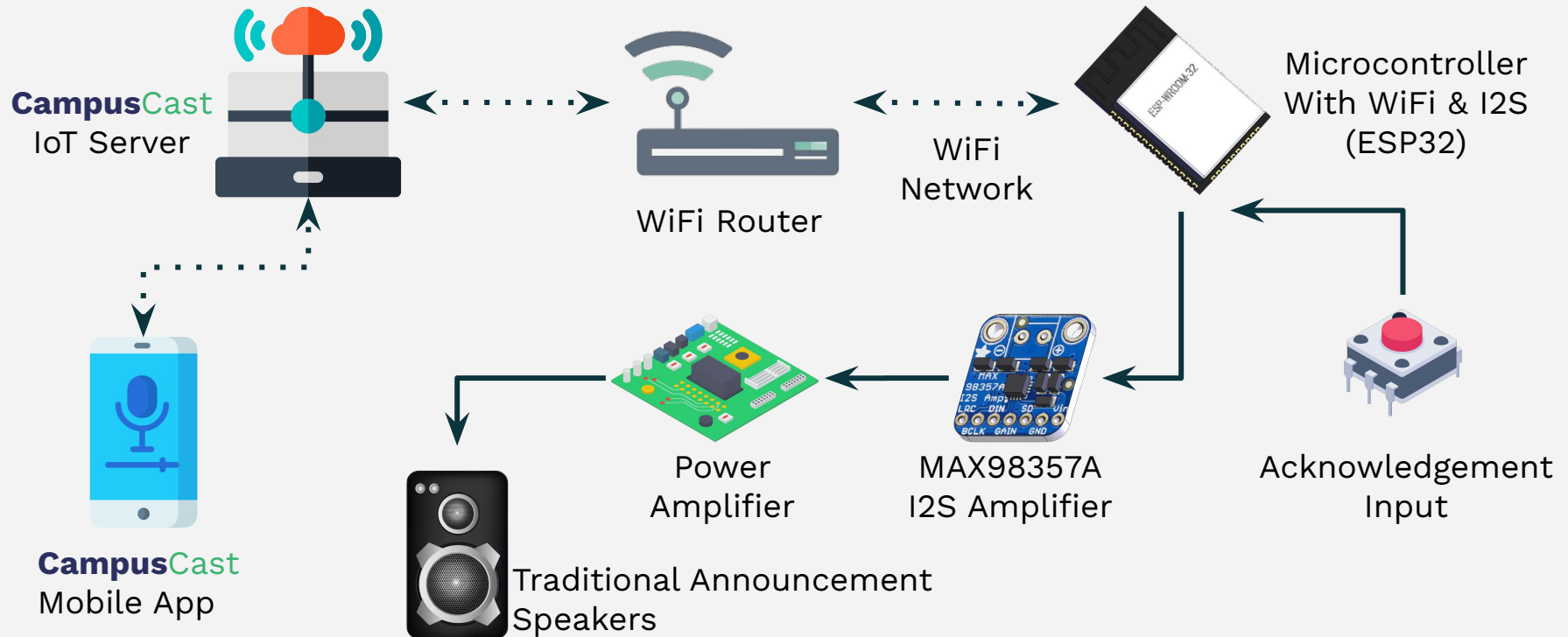
- **CampusCast** consists of both hardware and software systems
- The hardware system is an IoT device that is designed to connect with the traditional college/campus announcement speakers
- By connecting the **CampusCast** device to the speaker, it transforms the speaker into a smart speaker



CampusCast Installation



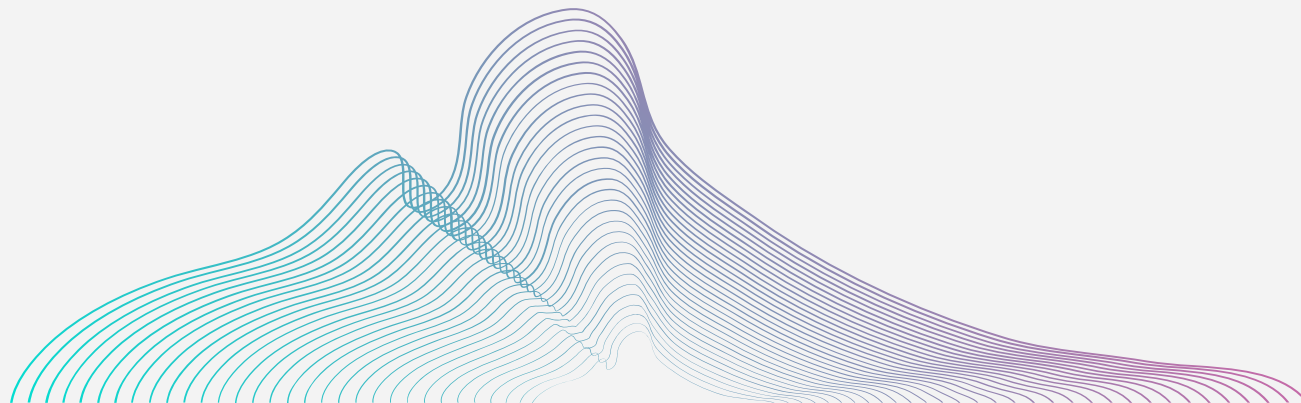
CampusCast System Architecture





Hardware Overview

The hardware that powers **CampusCast**



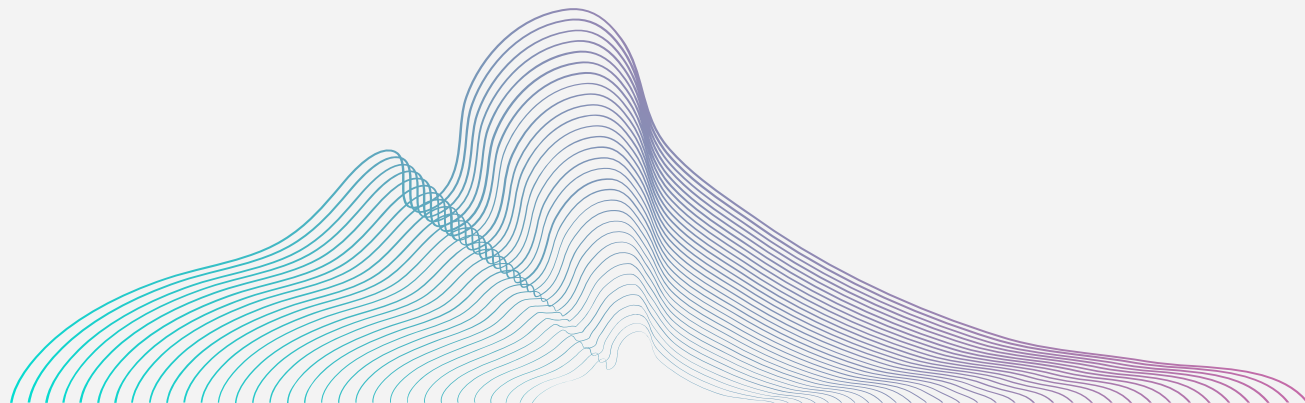
Components Used

1. **ESP32:** A powerful microcontroller that serves as the brain of the **CampusCast** system.
2. **MAX98357A I2S Amplifier:** A digital-to-analog converter that converts the audio signals from the ESP32 into an analog signal.
3. **Class D Power Amplifier:** An amplifier that amplifies the analog signal from the MAX98357A and provides enough power to drive the college wall mount speakers.
4. **Acknowledgement Button:** A button that allows the students to acknowledge that they have received a message or announcement. This helps ensure that important information is not missed.



Software Overview

The intelligent software behind **CampusCast**





Software Overview

1. **Backend IoT server:** Planning to use Node-RED or Node.js for the backend IoT server that will handle the communication between the **CampusCast** devices and the mobile app.
2. **WebSocket:** WebSocket technology to establish a real-time connection between the IoT server and the **CampusCast** devices.
3. **Mobile App:** We planning to use React Native to create a mobile app for teachers and authorities to send announcements to the **CampusCast** devices.

Conclusion

In conclusion, **CampusCast** is a powerful solution for colleges and universities to improve their communication system with students, faculty, and staff. The system uses IoT technology to deliver announcements, updates, and alerts in a timely and efficient manner. With features such as Exam Time Alerts, **CampusCast** helps to address common problems faced by college campuses. The combination of hardware and software components provides a user-friendly solution for campuses to modernize their communication system. Overall, **CampusCast** can enhance the campus experience for everyone involved.

Our Team



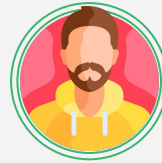
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Thanks

From



CampusCast

