



COLORADO SCHOOL OF MINES

Smart Campus Multimedia and Dynamic Signage Platform

Project Summary

This project will develop a proof-of-concept software platform for managing and displaying dynamic multimedia content across campus screens. The system will support event-driven digital signage, media submission and approval workflows, integration with campus reservation data, and deployment to prototype hardware such as Raspberry Pi-based display nodes. The goal is to create a more flexible and scalable platform that can present location-aware content, promote campus events, and adapt to different screen sizes and display contexts.

Project Description

To update, improve or replace Mines' current digital signage capabilities by developing

1. Central Multimedia Hosting and Delivery – Develop a website or server-backed platform that stores, organizes, and delivers multimedia content to campus displays.
2. Media Submission and Content Intake – Either API integration with campus social media accounts, or a dedicated media submission system that allows campus users or administrators to upload content for review and scheduling.
3. Reservation System Integration – Integrate with campus room/event reservation data allowing screens to automatically display events relevant to nearby rooms, upcoming reservations, or active campus activities.
4. Dynamic Signage Based on Events and Location – Create a signage engine that determines what content to show based on current events, screen location, nearby rooms, etc.

Depending on the implementation time and successful completion of these tasks, enhancements may

- Reservation-to-Social Media Posting
- Special Event Signage Mode
Allow administrators to temporarily override standard content for special events such as campus tours, conferences, commencement activities, or emergency messaging.
- Screen Setup and Provisioning Tools

Project Logistics

Given the nature of the implementation, low-cost prototype display clients may be needed to demonstrate deployment. The project will also require extensive quality assurance for validation of multiple edge cases.