Abstract
Our project was to further develop and enhance the web application of STEMfire (www.stemfire.com), a site that is geared to pair industry professionals to educators who are in need of volunteers to promote Science, Technology, Engineering, and Mathematics (STEM) education. We were given an initial site that had basic functionality, and we were tasked with the goal of making the process of connecting professionals with educators easier. This led to the three major new features that would significantly improve the utility of STEMfire: improve the searching ability on the site so professionals can search for upcoming events that meet their area of expertise, include a complete internal messaging system so that users can communicate with each other on the site instead of through email (similar to LinkedIn’s InMail), and implement various forms of analytics to gather valuable metrics so we know what needs to be worked on in the future.

Results
An advanced search for events and users. This improvement in search functionality uses a dedicated Elastic Search server and helps find more relevant and accurate results.

An internal messaging system to help users communicate through the website as opposed to using personal emails. Users follow up with each other about volunteer events without having to give up their privacy.

Improved analytics that track useful metrics like user retention or user experience.

Architecture
STEMfire helps improve STEM education in North Texas. By providing a tool for educators to connect with professionals in STEM careers, STEMfire enhances learning experiences for students in the K-12 grades.

When using STEMfire, professionals can more easily find ways to give back to their communities and make a bigger impact than anywhere else. Some schools lack resources to help teach STEM to students, but STEMfire can be part of the solution to the problem.

With our contribution to the project, they now have a more immersive and robust application, so that it's significantly easier for educators and industry professionals to connect with each other.

Impact

We adopted a fully-functional Ruby on Rails web application and decided on key improvements to make after meeting with the client several times.

We built upon the app by adding more functionality to search queries. Communication in the app was improved by creating an internal messaging system and by adding the functionality of email notifications to help bring users back to the site. We added better analytics so that whatever information is useful to the client can be tracked.

Summary