Aggie Events: Simplified Campus Event Coordination

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ABSTRACT

UPDATED—12 April 2019. At Texas A&M, student organizations that want to increase their membership as well as promote events they host are encouraged to use MaroonLink, the official TAMU student organization hub. However, due to the multiple shortcomings of MaroonLink, organizations often turn to other services and means to promote themselves, which makes it more difficult for students to get involved. In this paper, we propose and create a prototype for a sleeker, more user-oriented campus events application that seeks to improve upon the design of MaroonLink. After evaluating students that are both members and leaders of organizations, we've determined that our prototype is successful in creating a more efficient and amenable user experience for the students at Texas A&M University.

Author Keywords

TAMU; Event; Find; Texas; A&M; Howdy; Coordinate; MaroonLink; Organizations; Campus; Students;

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

INTRODUCTION

At a college campus, the promotion and coordination of events is an essential part of maintaining the campus community. Students at a university typically have access to hundreds of organizations for specific interests and purposes: some student-run, some faculty-run, and some that exist as part of the local community. With all of these competing organizations hosting meetings, workshops, socials, fundraisers, and more, it can be difficult for any individual group to get the information out to the student body about their events. As a result of this, numerous groups on campus will try any method within their capabilities to advertise their organization and their on- and off-campus events, including sending campus-wide emails, aggressively passing out flyers in high-traffic areas on campus, and holding giant banners near academic buildings [1]. Any students at Texas A&M will instantly recognize these methods, and arguably most share the opinion that these promotion tactics could be considered a nuisance.

MaroonLink

Currently, Texas A&M hosts and maintains a website called MaroonLink, which automatically creates a profile for every Recognized Student Organization (RSO) on campus [2]. MaroonLink allows students to find RSOs, attend events, and track their involvement on campus through their application. However, MaroonLink has multiple shortcomings that prevent it from fully achieving this goal. The interface itself is intuitive enough, and should be easy to understand for any students interested in getting more involved on campus, but very few students actually utilize the functionalities of this website. Many RSOs' profiles feature out-of-date information and fail to explain how new students can join their organization, in part because MaroonLink doesn't require them to display this information. Despite the fact that StuAct Online, the internal website for organization leaders, has the names and contact information of all current officers and faculty advisors for RSOs, this information isn't utilized by MaroonLink, leading to plenty of profiles that imply their organizations have no officers (and no members). Furthermore, the 'Contact' button on RSO profiles contains no section for a message; only a name, email, and subject input, in which users must select their subject from a drop-down list. This makes getting in contact with RSOs difficult and unintuitive at times, especially when the organization's contact email on file is out-of-date. There also isn't a great solution for finding upcoming events hosted by certain organizations--users typically will have to search each organization's name in the 'Events' page of the website, which displays every upcoming event hosted by every organization on campus.
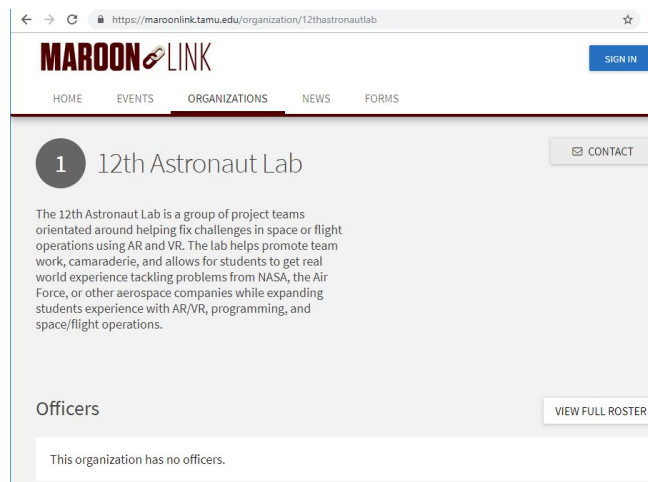
Figure 1. An organization with no listed officers, meeting times, or contact email

There also exist many difficulties when utilizing MaroonLink from a leader's point of view. For an officer of an RSO, once the profile has been created and perfected, the main purpose of MaroonLink becomes to create and promote event pages. However, this process of creating events is excessively lengthy; users must fill out multiple-page forms in order to just have a simple event appear on the 'Events' section, and each event must also be approved first by an at times slow-moving committee. The website also has an issue with storing events; they'll sometimes disappear without warning, and past events may not event show up on an RSO's page.

Figure 2. The fifth page of the lengthy event-creation process on MaroonLink

All of these issues lead to the conclusion that MaroonLink exists to fix a real problem, but fails to fully do so, and as a result is underutilized by the vast majority of students at Texas A&M. Organizations at TAMU have to turn to using Facebook, GroupMe, and the aforementioned methods to manage and promote their events. The entire process could be improved with an updated version of MaroonLink that resolves some of the issues that lead to the student body ignoring the website, and the result would be that students would hopefully find it much easier to get involved on campus. Whether through a shared hobby, career goals, political/religious/ethnic background, or anything else, students can benefit from becoming more involved with their peers, and this involvement will help strengthen the Aggie Network and sense of community here at A&M. Additionally, the increase in technology-related campus resources can help keep the university competitive amongst other universities [3].

Existing Solutions

The main alternative existing solutions to our problem are: Design iterations for a location-aware event planner [4], or Extraction and Compilation of Events and Sub-events from Twitter [5]. These solutions involve finding events from proximity to the user, or based on social media posts. These solutions are not really viable when one considers the circumstances surrounding our current situation. First of all, our solution is mainly designed in order to avoid having to extract information about events from Twitter or any other social media platform. Our solution successfully removes the social media aspect of finding events. That solution will ignore any other social media that current organizations use such as flyers, emails, Facebook, etc. The other solution based on using location to find events fails to account for the users interests. For instance, if a user is interested in Chess events, that solution will fail to take that information into consideration. Another challenge for a proximity-based event solution is that a majority of students at Texas A&M do not live on campus. Using that alternative solution while the students are at home would only list or display events near their homes/apartments. For the aforementioned reasons, the existing solutions are not valid answers to our current situation.

PROPOSED SOLUTION

Our proposed 'Aggie Events' application is a complete overhaul of the existing method (MaroonLink) of setting up and finding events. The solution involves completely integrating the website used to advertise events into a new phone application that can be used by students in order to effectively find events. Our goal is to create a more user-friendly experience by saving them time and effort. The solution is being designed with the concepts of usability and visibility in mind. The design for organization leaders emphasizes utility to ensure that planning events is easy and straightforward on the 'planners' side. This involves shortening certain portions of the event planning

process and removing some of the unnecessary data gathering fields of the forms. The 'user' side of our solution focuses on increasing the visibility of events for students. Visibility is enhanced by allowing the user to prioritize events from organizations that they are members of or are interested in. This is done by adding a dashboard of saved organizations, which becomes the default page of the app.

We arrived at this design solution after sitting down and attempting to accomplish tasks on the MaroonLink website to identify possible design flaws in the interface. We performed a few cognitive walkthroughs, including attempting to find a certain type of event, trying to find an event from a certain organization, and trying to create a new event. These were a few main areas in which we saw room for improvement. Additionally, some of our members are actually organization leaders on campus, and have experience using MaroonLink before this project (which is what helped inspire the idea for this project/study).

Phone Application
We decided to develop a mobile application from the ground up as our prototype; the full application ideally would allow students to sign into their student account and join student organizations or find events on campus. The phone application would also handle notifying members of an organization about upcoming events for their organization or topics of interest. This improves on the visibility of the current solution by directly notifying members of an organization about upcoming events that are relevant to them. This reduces the need for organizations to advertise in person, or use other forms of social media. Most importantly, this process is automated so that the event planners only have to input the planned event into their organization page. These notifications are sent in the form of subscriptions in order to remind members about upcoming planned events. The advantage to having a mobile application versus a website is that students can look for events wherever they are and find event details easily on the go (not every student has a laptop and there isn't always Wi-Fi available, whereas mobile phones can use 4G/LTE). While the MaroonLink is accessible from a mobile device, it is not configured very well for a mobile platform, and is more difficult to use there than on the desktop. Additionally, mobile applications provide native functionality that a website would not be able to provide, which can encourage use of the application [6].

DESIGN SPECIFICATION
As specified in our workplan, we started off by designing the basics of the interface in a team brainstorming session. The most important part of the project is creating an interface design that is efficient, pleasing to use, and intuitive, so we spent most of our time in the design stage. In the first week or two of development, the team started

implementing our designs in code, using React Native for the frontend implementation and libraries such as React Native Elements for aesthetically pleasing UI elements. The following weeks were spent creating the student side of the application such as the Subscription, Find New Event, Find New Organization functionality. The last two weeks of development were mostly spent on creating the Student Organization Leader side of the application, such as creating a new event. Once the high-fidelity prototype was finished, we performed a quick evaluation to see if we were successful in our design.

Initial Interaction Design
We had a few main considerations in our initial design stage that were inspired by problems we saw on Maroonlink. One big issue with Maroonlink is that it's way too cluttered--the website tries to satisfy multiple needs without actually focusing in on anything in particular. As a result, there is too much information presented to the user on the Maroonlink homepage that they are unlikely to care about, such as general TAMU links (all students know the Howdy URL already), news/blogs, and forms (already accessible on StuAct, which is where students know to go for handling organizations' finances). We decided that our application should primarily focus on campus events and campus organizations. Because of this, we tried to be cognizant of the features we added during development to avoid feature creep. Below is a low-fidelity prototype of the simpler interface we had in mind for event creation:
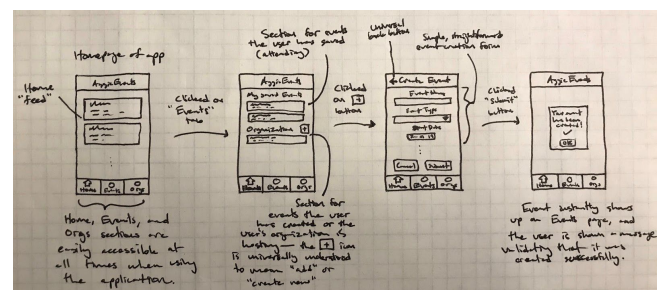

Figure 3: Sketched prototype for mobile app

We also thought the interface could be more aesthetically pleasing than Maroonlink, which would encourage students to use it because it would be more enjoyable to use. We chose to use smooth gradients for the background with white text on top, since this is a popular, aesthetically pleasing design paradigm [7].

We spent time discussing different ideas for the layout in order to figure out which interactions would be the most intuitive to a new user. For example, if we include a button with a right-facing chevron on it, will users expect a page to pop up in the middle, or slide in from the right? This is the type of consideration we thought about when designing the interface on paper.

Implementation in Software

We began implementing our interface design in software. We first created the user side of the app, which includes the home screen, events screen, and organizations screen. The home screen is the most important of these; it contains the user's feed and organizations that the user is a part of or is interested in. This is one place where our design differs from Maroonlink. In our opinion, the application should exist to benefit the students using it to find events primarily, and students are most likely to want to attend events for organizations or topics that they're interested in. This led us to the idea of the "feed"--rather than showing every single upcoming event (which will surely be dominated by those organizations that use the application the most or host the most events), we decided to show users events they'd more likely want to attend.
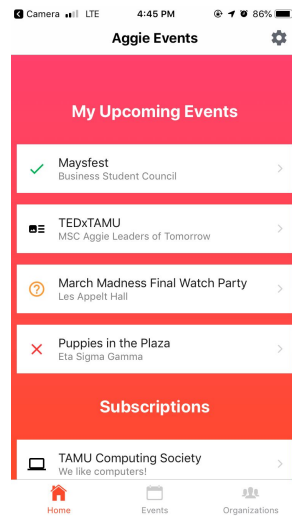

Figure 4: Our homepage and user feed

We also added a few simple features to this home screen to improve efficiency. Firstly, we added the option for organizations to select an icon, so that users can tell without clicking on the event what type of event it might be. Secondly, we added an icons that override these organization-selected icons based on the RSVP that the user has submitted. In the example above, the user has decided they want to attend Maysfest, and have selected "going" on the event page. On the home screen, we reflect this so that users can quickly glance through their upcoming events and know which ones they've already RSVPed for (we may in the future add the additional feature to allow users to select to hide events that they've selected "not going" to).
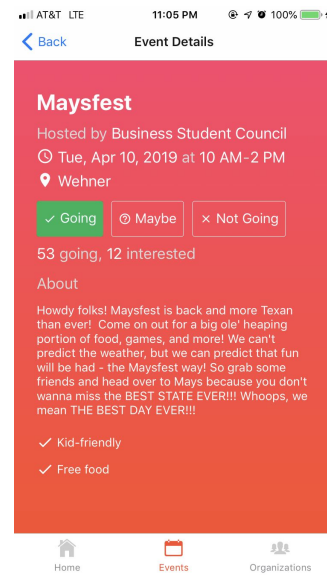

Figure 5: An event details page

We also tried to make our event page responsive and intuitive, focusing on the ideas of availability of information and efficiency. We show all relevant information for an event: the name, host, date/time, location, RSVP buttons and total students that have RSVPed, a description, and a few attributes which can be selected by the organization to encourage students to attend [8]. The attributes feature is inspired by MaroonLink, which has a similar feature which we thought was a useful way to increase event attendance.
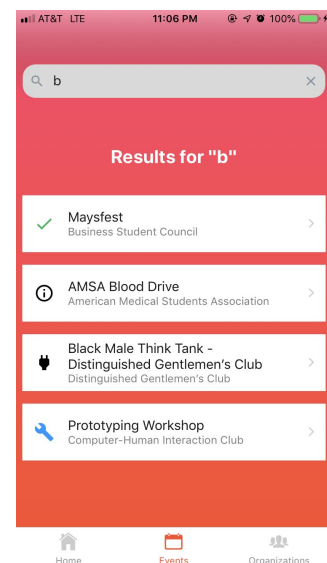

Figure 6: Events search

Our events and organizations page are designed to allow the user to easily search through our database. Users can search

using a mixture of event title and event host queries; for example, if a user typed "computer prototyping", the system would grab the two space-separated queries from that statement and would return the Prototyping Workshop event seen above (among other events, potentially), since the title includes "prototyping" and the host includes "computer".. The goal was to continuously search while the user is typing, to increase efficiency by not forcing the user to type the entire name of an event or organization to search for it.
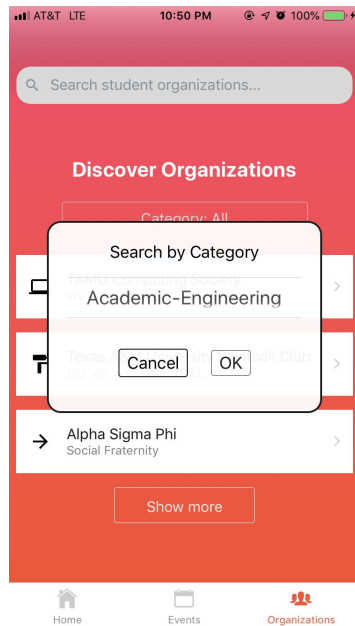

Figure 7: Organizations search

On the organization page, we also included the ability to search within a certain category. We wanted to allow users to search amongst multiple categories, but the technical implementation of that was deemed outside of the scope of our project.

We also made the event creation and revision process more efficient. Users can create events from the events page and can easily view all upcoming events for organizations that they help manage.
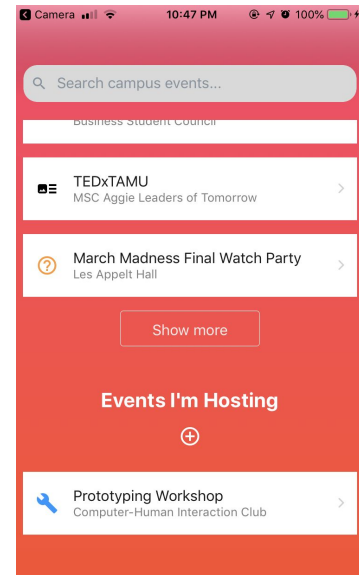

Figure 8: Managed events

From this screen, the user can create a new event or edit a current event. Events that the user is helping to host are highlighted with the blue "build" tool, which is a universal symbol in app UI for creating something. Events are highlighted this way anywhere that they appear in the app, so that the user can edit them at any time, without having to return to the above screen.

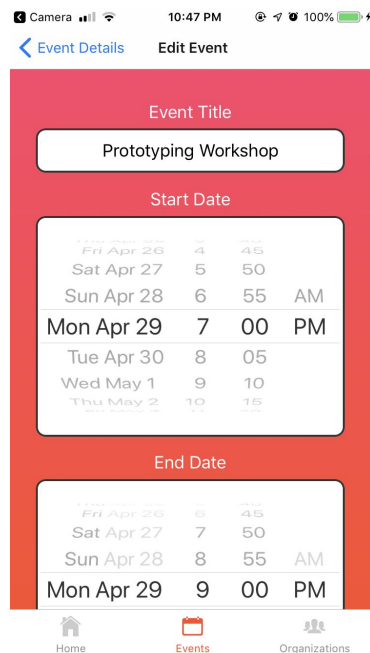Figure 9: Events can be edited from the event details page

Figure 10: An example of how a user can edit an event directly

Trials and Tribulations

The team ran into several obstacles during the development of the application and the backend. One major trial the team faced was setting up the backend server communication from MongoDB to NodeJS. The NodeJS program could not properly recognize that MongoDB was installed into the server. This resulted in our team having to reinstall MongoDB globally in order for all programs to be able to link to a database. Another problem that we encountered was the implementation of NodeJS as a global. Our team didn't realize that there are several ways to install the same program, or that different packages would have different behavior. Our team mistakenly installed a nodejs version that could not fully integrate with Mongodb. This caused a lot of confusion until the team finally realized that our node version was outdated and needed to be upgraded. A lot of these issues took a long time to identify but were quickly fixed afterwards. Unfortunately, due to time constraints, we weren't able to fully integrate the frontend and backend, so our demo featured a frontend wireframe to show how the app would functionally work.

Another issue is that Apple doesn't allow developers to create and test iOS apps on without their proprietary Xcode program, which is only available for macOS. Since we have iPhones but only one of us has a Macbook, we had to think of a different solution to allow us to test the application during development. Fortunately, since we aren't writing the frontend in Swift, we are able to write and run the code on any device. We could either deploy to an Android emulator or find a way to deploy directly to our iPhones, and we chose the latter because we felt that it would be easier to evaluate the design if we could physically interact with the application on our phones as potential users would. Fortunately, we were able to use Expo, which allows us to send the app through a server opened on a port on our local machines to our phones through the Expo client app [9]. This proved to be an effective solution, and we think it will be beneficial during the demo, since other students will be able to test it on their phones using the same process without having to actually download our native app.

Solution Requirements and Validation

Towards the end of the project, when all the main functionality was completed, our team went ahead with our initial plan of gathering feedback on MaroonLink and Aggie Events to see if our solution has properly addresses some or all of the problems that were identified in our problem statement. The questionnaires we utilized were based on a likert scale to facilitate the solution validation process. This is done in order to observe a gradient-scale of improvement from the new proposed solution as compared to the current solution. The main criteria that was obtained and measured from our surveys are the two design concepts of usability and visibility. The team asked the users to evaluate our application based on how quick and easy it was to find new events, find new organizations, and plan/create new events. The team was not able to acquire a large amount of participants for our research since the team fell behind schedule. However, we managed to survey 3 students, which is the bare minimum for exploratory studies.

The users we surveyed thought our solution was intuitive and easy-to-use on the whole. Since the latter two participants were actually organization leaders, they had a bit more experience with MaroonLink, and told us that they thought our solution improved on some of the issues they had noticed with the platform. Full data can be found in our appendix.

DISCUSSION

As aforementioned, we believe our design was successful in many ways. Firstly, we showed that the ability to have a campus events platform housed in a native mobile application had usability benefits--we were able to more quickly access to the platform, and it was configured for use on a mobile phone, whereas a website doesn't have to be. A mobile platform also allows for the addition of native functionality such as push notifications, or the ability to sync events with a phone's calendar. Although we weren't able to implement any native functionality within our time frame, these are definite possibilities, and would not be achievable by simply creating a website.

One area that probably didn't work as well as we intended was the organization category selection. This was partially a technical problem rather than a design problem; it was difficult to get the picker module to allow the user to see multiple categories at a time while scrolling, which made it less efficient to find a certain category when searching organizations. Additionally, since we used the exact categories that appear on MaroonLink, not all of them make a lot of sense to users; for example, the "Honor" category may not be very descriptive in what organizations one would find by making that selection.

One of our biggest findings was that users seemed to be more inclined to use an events planning app that was more aesthetic and user-focused. These were both noticeable problems with MaroonLink; finding an event to attend was like querying a database. However, with our solution, users were immediately presented with relevant events, which helped increase visibility and give them a tailored experience. Although many of our pages don't actually contain more information than their MaroonLink equivalents, our evaluation participants found Aggie Events easier to use because of focus on improving the user experience and making processes more efficient.

FUTURE WORK
Unfortunately, given the time and resource constraints during the project, we weren't able to complete all of the tasks we ideally would have liked to. From a development perspective, we would've like to have added a few more frontend features. We wanted to be able to connect the frontend and backend to result in a fully functional application, but there simply wasn't enough time. Additionally, getting access to TAMU's CAS system and MaroonLink/StuAct Online databases was highly improbable, and would've been a requirement to create a fully functional application. We also could have added a social feature of the app to allow users to invite their friends to events, which would increase efficiency by maintaining an in-app communication platform [10]. However, we think our prototype was successful in embodying the design ideas that we ideated at the start of the project, and was able to improve on many shortcomings in the MaroonLink platform.

We also would've liked to spend more time evaluating the success of our design. Of course, we continuously evaluated it ourselves while development was occurring by performing cognitive walkthroughs similar to the ones we performed on MaroonLink at the beginning of the project, but it can often be difficult for designers to identify their own design flaws. It would have been optimal to be able to have maybe 5-7 users perform cognitive walkthroughs on MaroonLink and our Aggie Events application and then take our survey, but this was wholly unrealistic given our

timeline, especially since development was slightly delayed and we didn't have the prototype ready until about a week before our demonstration and presentation.

CONCLUSION
We were able to construct a high-fidelity prototype for our interface design that, based on feedback from a few evaluation participants, proved to encourage events planning and campus involvement more so than MaroonLink. The incorporation of a mobile environment and user-centered and minimalist designs also improved perception of the application and led to users feeling like finding and creating events was easier. Our prototype has room for improvement but serves as a proof-of-concept for the creation of a more user-friendly and efficient campus event planning solution.

ACKNOWLEDGMENTS

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APPENDIX

Question	Answer
Classification (choose one)	Student or Organization Leader
Do you use MaroonLink often?	(1-5) Where 1 is strongly disagree, 5 is strongly agree.
Do you find yourself frustrated by the lack of information on Organization pages?	(1-5) Where 1 is strongly disagree, 5 is strongly agree.
Try to find a new event	
Was it easy to find a new event?	(1-5) Where 1 is strongly disagree, 5 is strongly agree.
Try to find a new Organization	
Was it easy to find a new organization?	(1-5) Where 1 is strongly disagree, 5 is strongly agree.
Try to create a new Event	
Was the process quick and easy?	(1-5) Where 1 is strongly disagree, 5 is strongly agree.
How easy is it to find an organization for a certain group and then find an event?	(1-5) Where 1 is strongly disagree, 5 is strongly agree.

Table 1: Our evaluation questionnaire

Question	Answers
Classification (choose one)	Student; Organization Leader; Organization Leader
Do you use MaroonLink often?	1; 3; 3
Do you find yourself frustrated by the lack of information on Organization pages?	3; 2; 5
Try to find a new event	
Was it easy to find a new event?	4; 5; 5
Try to find a new Organization	
Was it easy to find a new organization?	3; 4; 4
Try to create a new Event	
Was the process quick and easy?	4; 5; 4
How easy is it to find an organization for a certain group and then find an event?	5; 5; 4

Table 2: Our evaluation questionnaire results for 3 participants (answers written for each participant respectively)