

CMU Robotics Institute

Executive Summary

Community Partner

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Student Consulting Team

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Background

The CMU Robotics Institute, since its founding in 19979, has long been an international leader in robotics research and education as is the world largest university affiliated robotics research group. The Institute has a special program called RISS – Robotics Institute Summer Scholars, an undergrad research program that aims to provide students with an immersive experience in cutting-edge fields. RISS supports their mission not only to realize the potential of robotics but also to create a community of scholars passionate about robotics and to promote interest in the field. Within the CMU Robotics Institute, the RISS program is co-directed by John Dolan and Rachel Burcin, who is the main point of contact for this collaboration with the IS team. They work closely with an admissions committee as well as the faculty of the 30 individual labs, with many professors and PhD students within the Robotics Institute serving as mentors and reviewers to aid the matching process with applicants to the program.

Project Description

Project Opportunity

While RISS is a great program, the admissions review process is quite complex and time-consuming for the staff, including the admissions committee and all the labs and researchers involved. They currently use the SCS (School of Computer Science) admissions portal, which is missing some key interactive features, causing inefficiencies in the review process. It is important for us to develop a solution that is intuitive and easy to navigate in order to support the staff in going through the hundreds of applications. The previous IS consulting team has already built a custom rails app to help them to better manage the application process, but there is still much room for improvement in building out more advanced features that are tailored to our client's needs. Issues with the current system include a lack of system visibility and flexibility for the admin. Enhancing the application with more efficient views will save a lot of cost on time and human capital, creating a better admissions experience for not only the admission teams and the labs, but for the student applicants as well.

Project Vision

Our main project goal is to make the review process easier for all involved, by tailoring the features to the needs of the different end users. While originally our focus was on the reviewers as our end users, as the project moved forward we refocused our target to

improving admin features. We worked with our community partner to address their needs regarding administrator abilities such as editing application fields and text, required compatibility with CMU's database, and emergency security features, considering the security issue that was encountered after last year's deployment. These advanced admin features will help save time and make managing the system easier for our client.

Project Outcomes

Our project outcomes included many newly developed features built to address specific client needs for the admin's role. We created three new main pages for the admin dashboard, including a refined analytics page with dynamic charts and graphs, and enhanced admin abilities in Settings along with a more organized UI. The main points of all these features are global views – for better visibility of the system and efficiency for the admin – and editing settings – for future maintainability and flexibility of the system. These will allow the admin to have a better control of the entire system and make their job much easier.

Project Deliverables

The code repository was be shared in a zip file to the client, along with supporting documentation that included system notes and login credentials, FAQs with updated screenshots, and note for future development.

Recommendations

Due to issues with the server, we were unable to deploy the code, so all testing was performed locally. We would recommend working to get the code deployed as soon as possible in order to facilitate user testing with the client. Furthermore, it is important to note that the RISS system has encountered security issues in the past, so we would recommend doing a thorough security testing of the application before opening it to public use.

Our team has also compiled of many recommendations for system improvements, including refinements of existing features as well as ideas for new features that did not fit into our project scope. Additionally, in the document we have noted all points that have been requested by or discussed with our client. For future IS teams we would recommend, after becoming familiar with the current system, to review all the ideas with the client to prioritize them accordingly. In this way, future development should continue to be guided by the client's needs, which has led to productive results.

Student Consulting Team

Amanda Bao served as project manager and client relations. She is a graduating third-year student majoring in Information Systems. She will be starting her career in consulting with Deloitte this fall.

Yiyi Ding served as the lead designer. She is a third-year student majoring in Information Systems and Human-Computer Interaction. She will be working at Goldman Sachs as an engineering intern this summer.

Anish Krishnan served as the lead developer and client transition manager. He is a third-year student majoring in Information Systems and Computer Science. He will be working on software with Quantitative Researchers this summer.