

# **Web Networking Platform: Alumni Search Engine**

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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## Abstract

Once started with only 25 students yet currently grown into a student body of 250+, my alma mater high school struggles to maintain a tight-knit community and strong alumni network, resulting in lost networking opportunities for its current students. To address this concern, I developed a dedicated networking platform where the school and its current students can keep track of alumni contact information and easily search for a specific alumnus for future outreach. To maximize the effectiveness of the platform, I used the most accessible medium, a web application, to build the platform. Then, I deliberately chose the Django REST framework for building backend REST API and PostgreSQL for its database. To build the UI and implement an easily maintainable styling, I used React and Sass. After I finished building the platform, I deployed it on a Heroku server, but alumni data collection is still ongoing as it needs to account for certain legal concerns related privacy. In the next version of the product, I plan to redesign the user interface to be more practical and intuitive as requested by test users. Also, I'm continuing to collect feature requests by setting up meetings with current students and alumni.

## 1. Introduction

Started with only 25 students in total, my former high school has dramatically grown up to 250 over the past three years. With a sudden change in its size, the school has struggled with assimilating different groups of new students, and this has resulted in notable segregation between original and new members of the community. This not only limits the opportunity of sharing information with others but also disrupts the connection between the current students and recent alumni due to weakened community spirit. As a result, students, especially those who cannot afford extra education outside the

school and therefore only rely on school resources for gathering college admission and career-related information, are at a huge disadvantage.

To address this concern, another alumnus and I teamed up to build a social network service dedicated to the community so the current students can freely share information by anonymously posting college admission-related questions, look up alumni who pursued similar pathways, and even contact alumni for further questions.

## 2. Related Work

I was inspired to start this project after using Virginia Alumni Mentoring (VAM) [1], an alumni networking platform for University of Virginia alumni and current students. In VAM, users can publicly display themselves for hiring and networking opportunities. As a user of the platform, I have realized the significance of maintaining an alumni database in an accessible platform and providing current students with an opportunity to connect with alumni in different fields. Exploring different features the platform provides, I was greatly informed about what additional features besides alumni searching can be effective to offer noteworthy values and attract more students to join.

Another source that inspired our team in deciding which tools to use for implementing the platform is the Django REST framework [2] documentation. One of the framework's advantages is serialization which supports both Object Relational Mapping (ORM) and non-ORM data sources. This benefit was vital for our use case because our platform heavily depends on alumni data that are collected through google forms

and excel sheets. Serializing plain-text data into easily mutable objects and JSON was a huge component in automating data aggregation. Thanks to the easy usage the framework provides, our team could easily turn plain-text data into JSON and store them in the PostgreSQL database.

### 3. Project Design

Before starting to design and implement the platform, I conducted market research to understand how other large schools have managed the same issue. I wanted to determine if creating a new platform from scratch instead of utilizing other existing platform's group feature was worth the time and cost to achieve the goal of the project.

I looked up other international schools' websites and asked their alumni how their schools store their alumni databases and maintain the connection between alumni and current students. After a series of interviews, I found out that other international schools do not have any digital platform other than school Instagram accounts to keep track of alumni data, and only a few regularly host networking events to invite alumni and provide opportunities for current students to interact with the alumni. However, these annual events are not as effective as an online networking platform in making the alumni database accessible and continuously providing networking opportunities. The result of the research assured me that our project will serve a crucial role in resolving such a common issue that other schools also struggle with.

In addition to the interviews with other schools' alumni, I also evaluated the goal of the project. When I first came up with the idea, I did not immediately think of creating a new platform but instead utilizing one of the existing platforms. I closely scrutinized whether LinkedIn's group feature was sufficient to cover our needs, including additional features I planned. I concluded that LinkedIn is surely effective in publicizing one's background and experience, helping current students easily find alumni relevant to students' interests. Also, it is already widespread among college students, so attracting alumni to join a LinkedIn group is not a challenge. Though it seemed like a perfect candidate from my perspective, I still set up a meeting with the school representatives and

current students in leadership roles to ask their opinions.

During the meeting, I was surprised to find out that high school students would not voluntarily give up their free time to set up their accounts. Also, they are reluctant to expose their background and experience to their peers. It was clear at this point that the platform is no longer as accessible as I anticipated. Based on these insights, I concluded creating a new platform that can be only accessed by current students and doesn't require any profile setup is essential.

After two weeks of extensively gathering requirements from various sources, two main features were prioritized in the first minimum viable product: "Alumni search directory" and "Anonymous posting and answering questions". Additional yet minor requirements were: 1) the service should be accessible in multiple browsers including Safari, Firefox, and Chrome; and 2) the service should authenticate users by their own unique school email address so people outside the community cannot access their personal data. Once a student signs up with his or her own email address, the student will receive a confirmation email to ensure outsiders cannot inappropriately gain access to the platform.

Because it was our personal project, my team did not have any staff administration; so, another team member and I decided to utilize a project management tool GitHub Actions to follow each other's progress and break down the development process into multiple tasks, namely, tickets. We ordered these tickets by their significance and urgency and then began searching for tools suitable for this project. We soon decided on using React for the client-side and Django for the server-side, jointly with the PostgreSQL database. I mostly worked as a backend engineer in this project, implementing the application's server API and database management. One of the contributions I made was writing a shell script to automate the conversion of text-based excel data into appropriate Django database models for students and alumni data tables. This script helped us save considerable time in the long term when the number of users was drastically increasing.

During the data collection, a few ethical issues related to personal privacy arose. Our team initially planned to collect the current students' data through various sources such as LinkedIn, Facebook, and the school's counselors but found out these sources cannot be legally used without explicit consent from individuals. So, we ended up contacting the school administration office and asked for help with collecting the current students' information and admission results data with legally documented consent.

#### **4. Results**

The automation for managing data and the basic form of client interface supporting searching and posting questions features are fully implemented, but the data collection is estimated to take six months, according to the school administration office, to produce a legally approved and reasonable amount of data to successfully operate the platform and make it as valuable as my team initially intended.

Thus, our current goal is to continuously engage with the members of the school community to advertise the platform and encourage them to participate in networking with alumni. Once more data are collected, the maintenance of the service will be our major focus, and we will continue to collect users' feedback to integrate additional features into the service.

#### **5. Conclusion**

The lack of support in networking with alumni among international schools is prevalent partially due to their unique characteristics; that is, students rarely settle down in a single country or school and are from diverse backgrounds. However, if we consider the flaw from an opposite perspective, it can be their biggest strength as long as we successfully build up the network. Students, who attended international schools, will be able to continuously interact with professionals from diverse backgrounds and perspectives, creating an international network. They will benefit from countless, incomparable professional and learning opportunities in a number of countries. These goals are realistically achievable as long as international schools can find a way to build

up the network. Our project can come into play at this point and serve a crucial role in providing an effective tool or platform that those international schools can utilize.

#### **6. Future Work**

The project is still far away from its completion, and we want it to remain that way until we aggregate an adequate network of supporters and ideas to further improve the platform. Because our team currently consists of two undergraduate students who both graduated from the same international high school, we are looking forward to incorporating our personal experiences in such a background to conceive unique features dedicated to the international school community. For example, we can provide a feature to filter alumni by countries they studied or worked in, so current students or alumni can easily find alumni for guidance about the country they are planning to study or work in.

Such a unique feature will be especially beneficial to the platform considering its users' international backgrounds. Besides adding a new feature, we will continue to interview current students and alumni of varying ages to fully understand their needs and make a gradual improvement to the platform.

#### **References**

- [1] Virginia Alumni Mentoring. 2013. *Virginia Alumni Mentoring*. [online] Available at: <<https://alumnimentoring.virginia.edu/>> [Accessed 3 March 2022].
- [2] Django-rest-framework.org. 2021. *Django REST framework*. [online] Available at: <<https://www.django-rest-framework.org/>> [Accessed 22 February 2022].