

TECHNOLOGY CONSULTING

IN THE GLOBAL COMMUNITY

Final Consulting Report

Rwanda ASYV

Anushka Satpute & Annie Zhang

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Carnegie Mellon University



Alumni Management System

Executive Summary

Student Consultant, [Anushka Satpute](#), [Annie Zhang](#)
Global Community Partner, [Stella Wayianzuvuko](#), [Joseph NGENDAHIMANA](#), Kaboyo Julius

Community Partner: Agahozo-Shalom Youth Village (ASYV)

Agahozo-Shalom Youth Village (ASYV) is a non-profit organization in Rwanda that provides healing, education, and support to vulnerable and orphaned youth. Founded in 2008 in response to the 1994 Genocide Against the Tutsi, ASYV has empowered over 1,600 students, giving them the tools to build lives of dignity and contribute to a better world. The village encompasses 150 acres, with facilities for academics, recreation, and health services, serving approximately 500 students annually.

Project Opportunity & Vision

The project opportunity focused on enhancing ASYV's **Alumni Management System (AMS)**, which was underutilized due to UI/UX issues and a lack of essential features. These challenges prevented alumni and staff from fully leveraging the platform for networking, career opportunities, and community engagement. The goal of the project was to redesign and optimize the AMS to create a more user-friendly and functional platform.

Our solution included a comprehensive revamp of the AMS interface, improving system navigation, and adding new features like job postings, resume building, discussion forums, and an inquiry system. This upgrade enables alumni to engage more effectively with the ASYV community and supports their career and personal growth.

Project Outcomes

The key outcomes of the AMS enhancement include:

- **Improved User Experience:** Alumni can now update profiles, manage resumes, and apply for job and educational opportunities.
- **Networking & Community Engagement:** The system now supports discussion forums, mentorship programs, and event management, fostering stronger alumni connections.
- **Streamlined Communication:** A centralized announcements board and improved inquiry system help alumni stay informed and connected with ASYV staff.

Project Deliverables

Deliverables include the revamped AMS platform with enhanced features, Figma design files, documentation, user guides, and training materials to support system adoption.

Recommendations

To further improve the system, we recommend:

- Automating the donation payment verification process to enhance operational efficiency.
- Expanding data reporting capabilities with additional visualizations to support staff in analyzing alumni trends and outcomes.

Consulting Partner

Agahozo-Shalom Youth Village (ASYV)
<https://www.asyv.org/>

Through healing, education, and love, the Agahozo-shalom youth village empowers orphaned and vulnerable rwandan youth to build lives of dignity and contribute to a better world

About the Consultant

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Anushka is a senior in Information Systems.
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Agahozo-Shalom Youth Village

Final Consulting Report

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I About the Organization

Organization

Agahozo-Shalom Youth Village (ASYV) is a non-profit organization focused on providing vulnerable and orphaned youth in Rwanda the necessary healing, education, and love. Founded by Anne Heyman in response to the orphan crisis caused by the 1994 Genocide Against the Tutsi in Rwanda, Agahozo-Shalom is a place where "tears are dried" (from the Kinyarwanda word "agahozo") and where vulnerable youth can "live in peace" (from the Hebrew word "shalom"). The mission of ASYV formally defined what they do:

Through healing, education, and love, the Agahozo-Shalom Youth Village empowers orphaned and vulnerable Rwandan youth to build lives of dignity and contribute to a better world.

Currently, there are 4 grades, 24 families, and approximately 500 students in the school. Additionally, ASYV has 1,300 graduates and has served more than 1,600 young people since opening our doors in 2008. In terms of the staff, there are executives, teachers, family mothers, financial workers, IT technicians, administrative staff, logistics staff, nurses, social workers contributing to ASYV.

Facilities

Spanning over 150 acres with views of far-off lakes, farmland, and endless rolling hills, ASYV is located about 40 kilometers east of Kigali, Rwanda's capital city. The grounds are fenced and monitored 24 hours a day by security personnel. The facilities include a school with 22 classrooms and computer labs, staff offices, student residential houses, a dining hall, a canteen, a sports field, two clubhouses, a farm, a solar field, several guest houses, a visitor center, and a Health & Wellness Clinic. The village has access to wireless internet, though connectivity is slow due to lack of bandwidth (16 bps). The electrical current used in Rwanda is 220V, and the power supply can fluctuate at times.

Programs

ASYV's academic calendar consists of three terms, separated by two-week breaks. There are two main programs: formal education and informal education. The formal education track encompasses an enrichment year as well as Senior 4, 5, and 6. Classes are conducted in English. In the enrichment year, students go through comprehensive curriculums in Intensive English, Digital Literacy, Mathematics, and Science. During the following years, students also have the opportunity to select subject combinations to study, including Physics, Computer Science, Math, Economics, Geography, History, Literature, Biology, and Chemistry.

Informal education at ASYV includes various activities such as sports, art education, and community service. The art component covers a wide range of mediums such as digital media, recording, photography, and filmmaking. The service aspect, known as "Tikkun Olam," involves students engaging in activities like teaching English in nearby schools, constructing houses for underprivileged villages, assisting in clinics, or receiving training related to the One Laptop Per Child initiative. Additionally, students have the opportunity to participate in clubs such as Dance, Drums, or Information Technology. For students demonstrating particular potential, there are dedicated classes for TOEFL and SAT preparation.

Staff

The executive leadership includes Jean-Claude Nkulikiyimfura (Executive Director), Shiri Sandler (Managing Director), Christine Icyitegetse (Director of Finance), Richard Niyibigira (Country Director), Aloys Kagimbura (Special Projects Manager), and Stella Wayianzuvuko (Principal, Liquidnet Family High School). These leaders, along with teachers, family mothers, financial workers, IT technicians, administrative staff, logistics staff, nurses, and social workers, contribute to ASYV's mission.

Technology Infrastructure

ASYV's technology infrastructure includes 3 servers with a capacity of 6TB (main controllers), 2 N computing servers (MX hundred), Vcloud servers, and 5 computer labs with a total of 146 computers. The village has a science center equipped with 12 computers and 30 laptops for teachers. There is wireless internet, though connectivity is slow due to lack of bandwidth. The electrical current used in Rwanda is 220V, and the power supply can fluctuate at times.

Technology Management

The IT office in the school is managed by Joseph and three other teachers or alumni who deliver IT solutions and computer courses. Joseph is responsible for the school's learning management system, software, hardware, and the development and maintenance of the Alumni Management System (AMS). Justin, the IT specialist in ASYV, is capable of troubleshooting and operational task management. Deo, the IT coordinator, works to fix issues in the village. If problems escalate, they may go to Kigali for external support.

Technology Planning

ASYV has long hoped to develop its own learning management system to handle teaching materials, assignments, attendance, etc. A five-year technical plan is in place, though it is revised each year to meet specific needs. ASYV plans to build more cable-based wifi connections in the village due to the grown-up trees blocking the signals of the old point-to-point connections. The long-term goal is to create one integrated platform to manage all affairs in village life and school, with the AMS regarded as a first step towards this goal.

Communication

ASYV employs various internal communication methods, with face-to-face interaction being the most prevalent. Email is frequently used for both communication and sharing documents, typically in Excel or Word format. Phone calls, text messages, and WhatsApp are also utilized. External communication includes email, video calls, phone calls, and text messages. The New York office handles most external communication with donors, visitors, and volunteers. ASYV maintains a website, asyv.org, and actively uses social media platforms like Instagram, Twitter, YouTube, and Facebook to raise awareness and gather funds.

Information Management

Data is collected through various means, including paper-based forms, Google Forms, and Microsoft Access. This data is often compiled and transferred to different formats, such as Excel, for analysis and management. Improving information management practices is a crucial objective for ASYV, as it deals with a substantial volume of critical data about each student. Currently, there are several databases in place serving different purposes, developed by the Monitoring and Evaluation Officer, the health and wellness department, and the school staff.

We aimed to streamline information management within the Alumni Management System (AMS) by integrating new features and improving existing ones. Data collected through the AMS would be more efficiently managed, reducing the time and labor required for transferring and analyzing data. This would enhance ASYV's ability to closely monitor alumni progress and update information as needed.

Business Systems

The development of most ASYV business systems occurs in both New York and Rwanda. The finance department, headed by Director of Finance Christine Icyigetse, handles payroll, salaries, and employee information. Employees can be reimbursed for their expenses. Both online payments via PayPal and in-site payments by Rwandan Francs are acceptable for visitor fees. Operations could be automated more to increase efficiency and accuracy.

II. Enhancing the Alumni Management System (AMS)

Motivation

The existing Alumni Management System (AMS) at ASYV was significantly underutilized due to various UI/UX issues, including cluttered information displays, non-functional buttons, and a general lack of organization. These flaws hindered both alumni and staff from effectively using the system for networking, career opportunities, and community engagement. Addressing these issues was critical to enhance the user experience and ensure the platform could serve its intended purpose efficiently.

Problem Description

The primary problem was the outdated and inefficient UI/UX design of the AMS.

Key issues included:

- **Cluttered Information Display:** Information was presented in a disorganized manner, making it difficult for users to find relevant data quickly.
- **Non-Functional Buttons:** Several interactive elements did not work as intended, leading to user frustration and decreased trust in the system.
- **Lack of Organization:** The overall layout lacked a logical flow, which confused users and decreased the usability of the system.

Additionally, the AMS lacked several essential features that were necessary to make the platform fully functional and beneficial for the alumni community:

- **Announcements:** There was no central place for staff to post updates and important information for alumni.
- **Resume Builder:** Alumni needed a tool to create and manage their resumes directly within the platform.
- **Discussion Forum:** A space for alumni to engage in discussions and share experiences was missing.
- **Inquiries:** There was no efficient system for alumni to send inquiries and for staff to manage and respond to them.

Opportunity Description

The redesign and enhancement of the AMS presented an opportunity to transform the platform into a comprehensive and efficient tool for the ASYV community. By improving the UI/UX and adding new features, the AMS could better support:

- **Networking:** Alumni could connect with each other more easily and build a stronger community.
- **Career Opportunities:** Providing a platform for job postings and applications would support alumni in their career development.

- **Community Engagement:** Enhanced features for announcements, discussions, and events would foster a more engaged and active alumni community.

Impact on Organization's Mission

Improving the AMS aligns directly with the mission of ASYV, which focuses on nurturing a supportive and connected alumni network. A functional and user-friendly AMS:

- **Enhances Alumni Support:** By providing tools for career development and networking, the system supports alumni in achieving their professional goals.
- **Fosters Community:** The addition of discussion forums and event management tools strengthens the sense of community among alumni.
- **Streamlines Communication:** Improved inquiry management and announcements ensure that alumni stay informed and can easily communicate with staff.

Implementation Approach

To address these issues, the scope of the project expanded from a simple frontend redesign to comprehensive upgrade, including backend changes.

- **Developing the Frontend from Scratch:** Instead of modifying the existing 50+ files, the frontend was rebuilt from scratch to save time and ensure a coherent structure. The basic structure and implementation of pages were kept similar to the old frontend to maintain consistency and sustainability.
- **Adding New Features:** Features such as announcements, a resume builder, discussion forums, and inquiries were integrated to make the AMS fully functional.
- **Backend Enhancements:** Necessary changes were made in the backend to support the new features and improve overall system performance.

By addressing the identified problems and seizing the opportunity for improvement, the revamped AMS is now better equipped to serve the ASYV community, ultimately advancing the organization's mission of supporting and connecting its alumni.

Outcomes

Before our team arrived, we reviewed the current web application to understand its structure and functionalities. Upon arrival, we had an initial meeting with Principal Stella, Dean of Students Julius, and Joseph, who was working on the backend with us. During this meeting, we gathered all their requirements and expectations (see Appendix 1. User Stories and 4. Meeting Notes). Based on this information, we created Figma designs and a design guide, which we presented to the same stakeholders for approval (see appendix 2. Design Guide and 3. Figma Design). During the implementation phase, we ensured adherence to the Figma design.

- **Landing Page: News and Alumni Stories**
 - **Outputs:** Developed and displayed news and alumni stories using card structures on the landing page. (see Appendix 5. Landing Page)
 - Included gender distribution and alumni's selected combination of subjects.

- Outcomes and Indicators: Enhanced the visual appeal and accessibility of news and alumni stories.
- **Alumni: Personal Profile**
 - Outputs: Displayed personal, academic, and employment information for alumni.
 - Implemented a new feature allowing alumni to edit personal information and add or edit academic and employment information. (see Appendix 6. Personal Profile to compare the old frontend design to the current frontend)
 - Integrated an open-source project for generating resumes into the AMS project.
 - Outcomes and Indicators: Improved user experience by providing alumni with more control over their profiles.
 - Observable evidence: Positive user feedback and increased profile updates.
- **Alumni: Alumni Directory / Staff: Alumni Report**
 - Outputs: Implemented a searchable alumni directory with filters for alumni and staff. Staff can now search for alumni and download the list in Excel format.
 - Displayed alumni reports with bar charts to show trends and percentages based on filters.
 - Outcomes and Indicators: Facilitated better networking and data analysis capabilities.
- **Alumni / Staff: Job Opportunity**
 - Outputs: Displayed job opportunities using card structures where alumni can apply and staff can approve, add, or edit.
 - Outcomes and Indicators: Streamlined the job application process and improved job opportunity management.
 - Observable evidence: Higher application rates and quicker job postings, easier to navigate and visually appealing.
- **Alumni / Staff: Further Education**
 - Outputs: Displayed further education opportunities with card structures.
 - Allowed alumni to apply and staff to approve, add, or edit these opportunities.
 - Added a feature to display books in the online library.
 - Outcomes and Indicators: Enhanced access to further education resources.
- **Alumni / Staff: Support & Giving - Donation Options**
 - Outputs: Implemented a donation page where alumni can donate, and staff can confirm payments or add a Momo code (SMS payment code).
 - Displayed alumni's donations and their statuses.
 - Outcomes and Indicators: Improved the donation process and transparency of donation statuses.
 - Observable evidence: Added a donation process specially for alumnus.

- Note: Staff manually confirm payments; automating this process is recommended for future improvements.
- **Alumni / Staff: Support & Giving - Mentoring Programs**
 - Outputs: Displayed mentorship opportunities using card structures where alumni can apply with one click and staff can approve, add, or edit.
 - Outcomes and Indicators: Enhanced mentorship program participation and management.
 - Observable evidence: Time reduction in sending out mentorship program applications.
- **Alumni / Staff: Social & Networking - Reunion**
 - Outputs: Displayed events with card and calendar views, allowing alumni to view and staff to add or edit events.
 - Implemented gallery cards where alumni can view and staff can add or edit which links them to google photo album links.
 - Outcomes and Indicators: Improved event management and alumni participation in reunion events.
- **Alumni / Staff: Social & Networking - Discussion Forums**
 - Outputs: Implemented an announcement board where alumni can view and staff can add and pin announcements.
 - Created a group chat page with WhatsApp QR codes and links for alumni to join and staff to manage.
 - Outcomes and Indicators: Improved communication and information sharing among alumni.
 - Observable evidence: Higher engagement with announcements and increased membership in WhatsApp groups.
- **Alumni / Staff: Contact & Posting - Frequent Inquiries**
 - Outputs: Implemented an inquiry page where alumni can send inquiries and staff can reply.
 - Created a frequently asked questions (FAQ) section where alumni can view and staff can add or edit questions.
 - Outcomes and Indicators: Improved inquiry management and access to common information.
 - Observable evidence: Reduced repetitive inquiries and higher satisfaction with the FAQ section.
 - Note: Integration with Gmail for automatic email replies was planned but not completed due to time constraints; staff currently store replies in the database and manually email students.
- **Alumni: Contact & Posting - Alumni Story Post**
 - Outputs: Implemented a form for adding alumni story cards.
 - Displayed alumni's posts and their statuses.
 - Outcomes and Indicators: Facilitated storytelling and sharing of alumni experiences.

- Observable evidence: Increased number of alumni stories shared.
- **Alumni: Contact & Posting - Alumni Job Post**
 - Outputs: Implemented a form for adding job cards which staff can either approve/deny or edit and post them.
 - Displayed alumni's job posts and their statuses.
 - Outcomes and Indicators: Improved job posting and application process for alumni.
- **Staff: Contact & Posting - Landing Page Post**
 - Outputs: Implemented forms for adding news cards or alumni story cards that will be displayed on the landing page.
 - Outcomes and Indicators: Streamlined content addition to the landing page.
 - Observable evidence: Increased content updates and user engagement with new posts.
- **Staff: Contact & Posting - Alumni Management**
 - Outputs: Implemented forms for adding alumni, grade, family, combination, and LEAP program information.
 - Outcomes and Indicators: Improved data management for alumni-related information as all the forms are all under one section with improved design.

Overall, significant progress was made in enhancing the AMS project. The new features and improvements align well with the initial objectives and user requirements, with observable evidence indicating positive outcomes. However, some features, like the automation of payment confirmations and Gmail integration for inquiries, remain as future improvements to further enhance the system's functionality and user experience.

Recommendations

To sustain progress and enhance the capacity of the Alumni Management System, the following concrete recommendations are proposed:

Automate Donation Payment Verification

- **Why:** Automating the verification process will save staff time and reduce the likelihood of errors, ensuring a more efficient donation management system.
- **How:** Collaborate with CMU Africa students to develop an automated system that integrates with current payment methods.
- **Resources:** Utilize existing software development tools and expertise from CMU Africa.

Enhance Reporting with Additional Graphs

- **Why:** Adding more graphs will provide deeper insights into alumni data, helping staff make informed decisions.
- **How:** Implement additional data visualization tools and integrate them into the existing reporting framework.
- **Resources:** Use existing code for implementing graphs and tools implemented for grade and gender to expand the reporting capabilities to family and industry.

About the Consultant

Anushka Satpute is a senior majoring in Information Systems and minoring in Psychology and Tech-Entrepreneurship. She aims to pursue a career in Database Administration.

Annie Zhang is a junior majoring in Information Systems and Linguistics. She loves photography and aims to pursue a career in frontend development.

Appendix A.

1. [User Stories:](#)

Stakeholders	Action
Super User (IT)	Can do everything
CRC Staff	<ul style="list-style-type: none"> - login - Can add/remove alumni - post alumni stories - adding alumni details like employment status/studies - post job opportunity - View report regarding alumni - approve the profile info for alumni
Alumni	<ul style="list-style-type: none"> - login - view their profile, job opportunity, alumni stories - can edit few things like marriage status, their profile pic - request for editing the employment status and further studies - request to post job opportunity or alumni story
Visitors	<ul style="list-style-type: none"> - no login - view alumni stories - just the Home page
Administrator (stella, country director, executive directors etc)	<ul style="list-style-type: none"> - login - view reports - view individual alumni details
Student	<ul style="list-style-type: none"> - login - view report regarding alumnus and their combination like combination with their alumni's employment status or further studies

Super User (IT)

1. As a Super User (IT), I want to have full access to the system so that I can manage all functionalities and support other users efficiently.

CRC Staff

1. As a CRC Staff, I want to add and remove alumni so that the database remains up to date.
2. As a CRC Staff, I want to post alumni stories so that we can share their achievements and experiences.
3. As a CRC Staff, I want to add alumni details like employment status and studies so that we maintain accurate records.
4. As a CRC Staff, I want to post job opportunities so that alumni can find employment.
5. As a CRC Staff, I want to view reports regarding alumni so that I can analyze and understand alumni outcomes.
6. As a CRC Staff, I want to approve the profile info for alumni so that the data remains accurate and verified.

Alumni

1. As an Alumni, I want to log in so that I can access my personal profile and other features.
2. As an Alumni, I want to view my profile, job opportunities, and alumni stories so that I stay informed and connected.
3. As an Alumni, I want to edit my marriage status and profile picture so that my profile remains current.
4. As an Alumni, I want to request to edit my employment status and further studies so that my profile is accurate.
5. As an Alumni, I want to request to post job opportunities or alumni stories so that I can contribute to the community.

Visitors

1. As a Visitor, I want to view alumni stories so that I can learn about their experiences.
2. As a Visitor, I want to access the home page so that I can navigate the site and find information.

Administrator

1. As an Administrator, I want to log in so that I can access the system securely.
2. As an Administrator, I want to view reports so that I can monitor and evaluate the system's performance.
3. As an Administrator, I want to view individual alumni details so that I can understand their profiles and status.

2. [Design Guide:](#)

1. Logo¹



2. Colors²



#000000

#d8b040

#957967

#f49c46

#6d5736

#498160

3. Fonts³

Title

Subtitle

Heading 1

Heading 2

Heading 3

HEADING 4

Body Text

Bulleted Point

¹ <https://www.asyv.org/visit-the-village>

² <https://htmlcolorcodes.com/color-picker/>

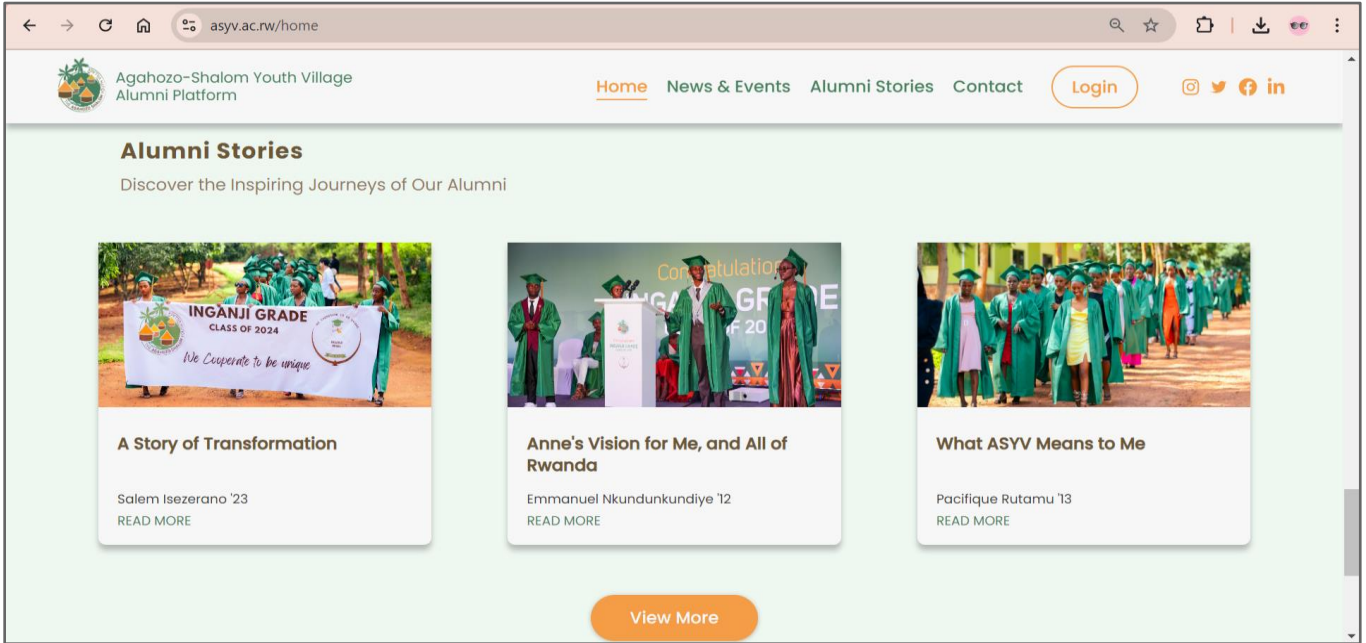
³ <https://fonts.google.com/specimen/Poppins>

3. [Figma Design](#)

4. [Meeting Notes Document](#)

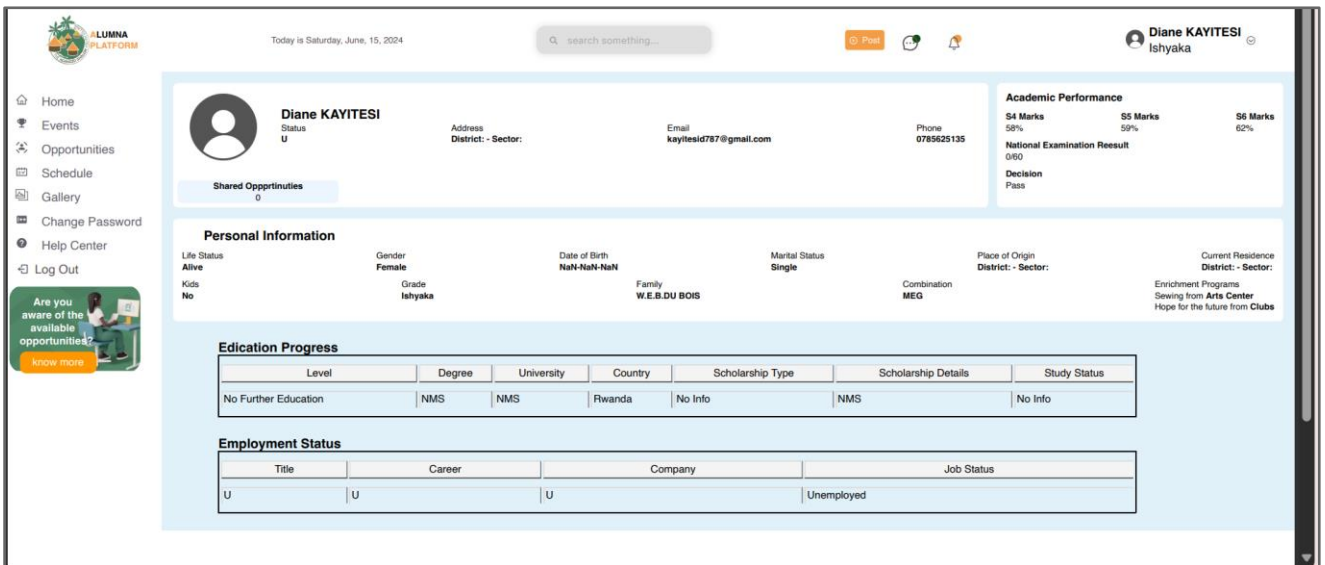
5. Landing Page:

Screenshot of the current Alumni Story section from the landing page.



6. Personal Profile:

Screenshot of the old frontend's personal profile tab when logged in as an alumni:(BEFORE)



Screenshot of the current frontend's personal profile tab when logged in as an alumni:(AFTER)

Browser address: asyv.ac.rw/personal_profile

Agahozo-Shalom Youth Village Alumni Platform

Logout

Generate Resume >

Personal Academic Employment

First Name Diane	Last Name KAYITESI	Gender Female	Date of Birth 2000-12-22	Place of Birth Gasabo, Gasabo
ASYV Affiliation Grade: Ishyaka Family: W.E.B.DU BOIS (No.4)	Combination Mathematics, Economics, Geography (MEG)	LEAP Programs 1.Sewing (Art) 2.Hope for the future (Club)	S4, S5, S6 Grades 58%, 59%, 62%	National Exam 0/60 (Pass)
Marital Status Single	Children No	Current Address Gasabo, Bumbogo		

Edit

Profile Summary: Diane, Alumni, kayitesid787@gmail.com, 0785625135

Navigation: Dashboard, Personal Profile, Alumni Directory, Career Opportunity, Further Education, Support & Giving, Social & Networking, Contact & Posting