SunCulture
Fund based donations and offsets

Practicum Sponsor Contact Person:

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Founded in 2012, SunCulture's Vision is to build a world where people take control of their environment in rewarding and sustainable ways. SunCulture does this by developing and commercializing life-changing technology that solves the biggest daily challenges for the world's 570 million smallholder farming households. We are the largest distributor of solar water pumps and irrigation kits for smallholder farmers in Africa and were selected by Fast Company as one of the World's Most Innovative Companies in 2021. Here is a good explainer video recently made by CNBC. Over the last 5 years, the company has grown significantly and has now deployed 50.000 solar irrigation units while employing 400+ people around the world.

Africa's First Solar Irrigation Company

The largest distributor of solar water pumps for smallholder farmers in Africa

335 employees, Africa based with a global network of talent

GLOBAL LEAP AWARDS

Fast Growing Across Africa

- Direct Operation
- Joint Ventures
- Distributor Countries
- Pilot Countries
- ★ Employee Locations

> 50% market share in Sub-Saharan Africa

78% CAGR since raising venture funding in 2017

Leading Africa's first commercial solar irrigation subsidy program in Togo in partnership with EDF and BBOXX

Solving for a Massive Problem...

Only 4% of African farmers use irrigation and are stuck at the bottom of the productivity ladder. Reliance on rain or other solutions result in...

Low yields	Low-value crops	Lack of resilience
Ag productivity is 50% lower than global average	Rain is sufficient for staple crops only	No protection from unpredictable weather/droughts

Life-changing Technology for Smallholder Farmers; Income Increase by 5x

86% increased their incomes during the Covid-19 pandemic, while 87% of farmers in Kenya reported being in worse financial position

98% increased farming productivity due to saving time and money, increasing yields, increasing land under irrigation, and growing higher value crops

...By Addressing Major Adoption Barriers

SunCulture leverages Africa's abundant groundwater, sunshine, mobile connectivity, and arable land to solve farmers' inability to access irrigation and off-grid energy

Lack of access to relevant technologies
$65bn market opportunity

Technology
ClimateSmart RainMaker

An adapted, affordable, and intelligent solution, allowing a 5x income increase at <0.5x cost of a petrol pump. Pump can power appliances for both the farm and the household.

Voted best solar water pumps in multiple classes by the Global LEAP Awards

Lack of access to financing
$150bn market opportunity

Credit
Pay As You Grow

Consumer financing facilities to farmers, allowing them to repay over 12 to 36 months

Additional information about your organization

- What type of people does your organization serve?
  - SunCulture serves smallholder farmers that are either farming for themselves and their community or are starting to sell produce as a business.
- What does your department or division do?
  - Following SunCulture's oversubscribed $27.5 million fundraise in early 2024, we have launched a dedicated Innovations Department to drive strategic growth and position SunCulture at the forefront of rural advancements. This department's primary mission is to incubate and test new, adjacent business ideas with a high-potential impact,
- Where are you based?
  - The company's headquarters is located in Nairobi, Kenya. I am based there as well. *Fun fact: I lived in Rwanda from 2017 to 2021*

Proposed Project Overview

- Describe the specific problem you are trying to solve, its strategic or operational relevance and the benefits to the organization and its customers including internal groups.
  - This Project is designed to harness the potential of digital solutions for impactful environmental and social engagement. The primary outcome is a transformative platform enabling individuals to seamlessly contribute to SunCulture's mission through donations or carbon credit purchases

- Describe the scope of the project as you see it, including the core problem, its dependencies, and the role of the team in developing a solution or possibly a part of the larger solution given the time and resources available.

  - While this project aligns with SunCulture's overarching mission, it is designed to operate with minimal dependencies on the larger team. The team will be tasked with an innovative workstream, allowing them to work independently while maintaining access to essential resources and insights from SunCulture's core operations when needed. Key dependencies include: 1) Integration with existing financial and operational systems for processing donations and credits and 2) Branding guidelines and messaging alignment to ensure coherence with SunCulture's values.

  - In summary the team will operate Autonomously with a high degree of independence, focus on delivering outcomes efficiently while reducing friction with larger SunCulture operations.

- Describe the specific goals rather than simply adding additional workers on an ongoing project

  - The goal of the project is to test out this new innovative approach to donations by developing a digital portal directly aimed at individuals

Project data

- If the project will be using data owned by you or any other organization, provide a description of that data (is the data available, type of data, size, storage (where is it currently?), how will students access that data, etc.)
  - Students will be given access to SunCulture's comprehensive data warehouse hosted on Clickhouse
- Please confirm and provide us with proof that you have full access to that data when you submit that application and that you are able to provide access to students. If you don't have access to the data required for the project at the time of your proposal submission, it will not be accepted.

   - Yes this is confirmed. Students will be given access to our data warehouse

Proposed Project Outcome

SunCulture

- Describe the specific outcomes you expect from this project
  - The primary outcome is a transformative platform enabling individuals to seamlessly contribute to SunCulture's mission through donations or carbon credit purchases. The initiative is anchored in three core functionalities:
    i. Campaign Management for Donations:
       - A user-friendly interface for campaign creation by administrators, supporting both one-time and recurring contributions. This feature ensures transparency and ease of access for donors who wish to support impactful causes consistently.
    ii. Carbon Calculator and Offset Program:
       - An intuitive tool for individuals to calculate their annual carbon footprint based on household consumption patterns.
       - The platform then offers a pathway to mitigate this footprint by purchasing certified carbon credits, directly supporting SunCulture's clean energy and sustainable agricultural projects.
    iii. Personalized Impact Dashboard:
       - A comprehensive dashboard providing users with real-time insights into the tangible impact of their contributions.

Proposed Project Outcomes

For illustration purposes
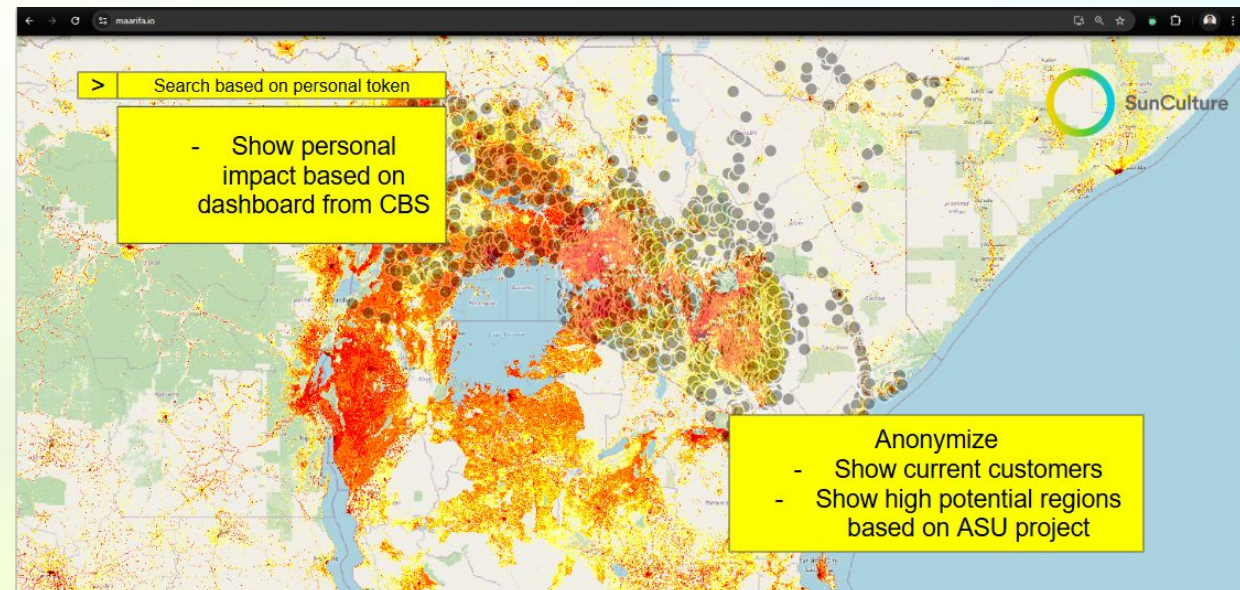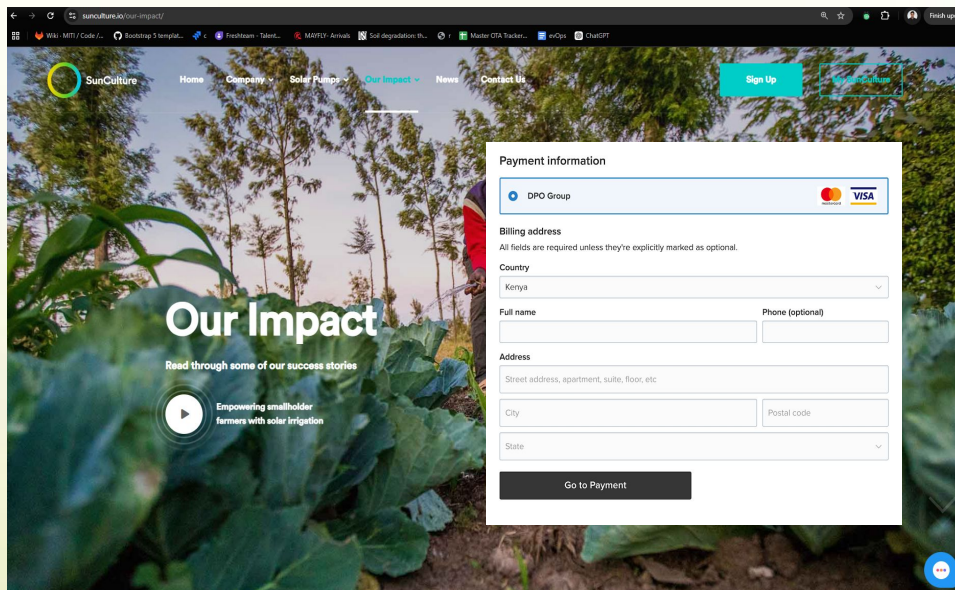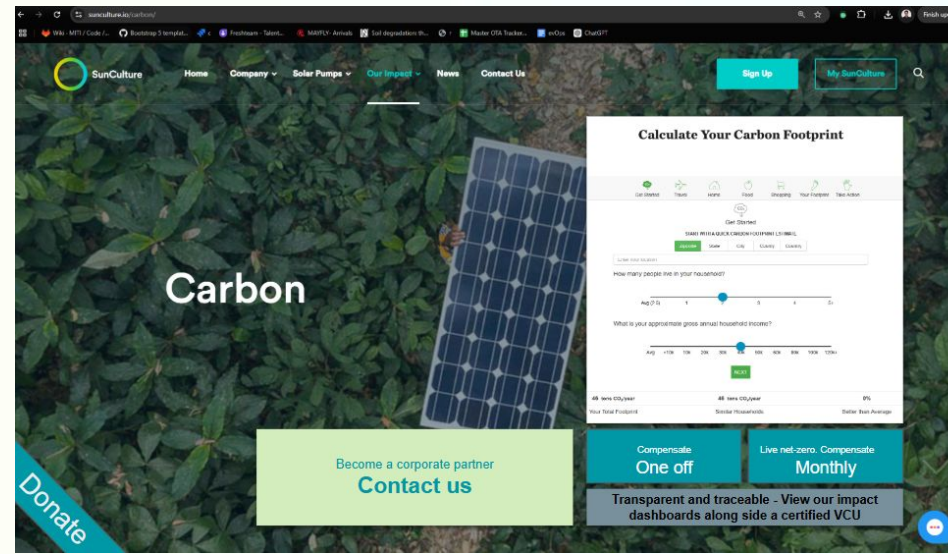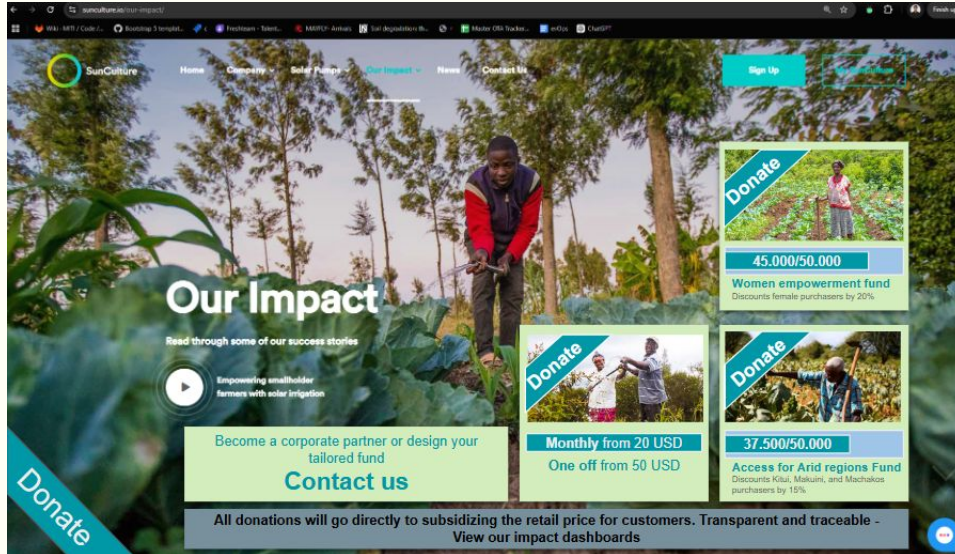
Proposed Project Outcome

- Or what technologies or systems will be prototyped, piloted, or put into operation?
  - Readily available front-end and back-end languages for application developer (e.g. ReactJS, NodeJS, etc.)
  - Readily available database technologies (e.g. mySQL, PostgresQL, etc.)
  - Deployment on AWS
  - Beneficiary data from data warehouse (clickhouse)
  - API integrations with payment gateways

Technology Skills Required

- Design
  - UX/UI design
  - application architecture
  - API integrations
- Application development
  - Front end engineering
  - Back end engineering inclu. integrations
  - Database management
- Project management
  - Breaking down tasks and ensuring the first deliverables come first
  - Including remote collaboration

Challenges and Risks

- Describe and explain challenges do you believe exist relevant to the project proposed and as well the risks these challenges can present including technical, organizational, scheduling, or communication challenges and risks
  - The project will ask a lot of autonomy from student team to deliver a end-to-end solution.
  - The risk, we foresee is students do not invest enough in the planning phase of the project and are in the end not able to deliver deployable solutions.
  - We would rather have less deliverables done, but in a deployable state than have many fragmented ones.

Preliminary Work Plan

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- Please provide a brief overview of the sequence of the various key tasks and desired outcomes in the format of a work plan from September to December

Month	Task	Description	Desired Outcome
September	DESIGN: Front-End & Back-End Architecture	- Design front-end interfaces using Figma for key modules (calculator, campaigns, donation pages). - Map back-end system architecture using draw.io or similar tools.	- Comprehensive visual mockups and system architecture diagrams.
September	Carbon Offset Calculator	- Develop and test a carbon offset calculator. - Deploy on a dedicated page: carbonoffset.me.	- Fully functional and user-friendly carbon calculator page.
October	Payment Integration	- Create an interface for purchasing carbon offsets. - Integrate payment solutions (e.g., DPO, etc.).	- Secure and seamless payment process for purchasing carbon credits.
October	Database for Campaigns	- Develop a database to manage donation campaigns. - Build a front-end interface to display active campaigns.	- Operational database and visually engaging campaign interface.
November	Donation Pages	- Develop pages for one-time and recurring donations. - Ensure integration with payment systems.	- User-friendly donation pages that encourage contributions.
November-December	Personalized Impact Dashboard (If the is time)	- Design and develop a dashboard to display user-specific impact metrics (e.g., CO2 offset, beneficiaries supported).	- Dashboard offering personalized insights to enhance user engagement.
December	Testing and Deployment	- Perform end-to-end testing for all modules. - Deploy the final solution and monitor post-launch performance.	- Fully operational platform, ready for public access.

Additional thoughts or ideas

- Please list any helpful resources or readings that students could review in advance of starting on your Practicum project
    - [Have a chance to hear from our CEO and get inspired by our vision and mission](#)
- Please list any additional thoughts or ideas that could motivate students to select your Practicum project proposal over others
    - This project is a huge chance to take ownership of an end-to-end project and deliver real impact! A rare opportunity for students
    - Become a part of the SunCulture experience and get inspired. SunCulture's investors include Netflix and Google ([press release](#))