Vandy Study Abroad Guide

Requirement Analysis Report

CS 4278 – Fall 2025 – Project Part 1

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Table of Contents

Problem Statement:

Students preparing to study abroad often face a lack of reliable, authentic information about programs, destinations, and local experiences. Most insights are limited to informal word-of-mouth conversations or the curated content found on university or third-party study abroad websites, which often lack depth, transparency, and real student perspectives. This information gap leaves students making decisions without trusted peer reviews or practical advice, while those already abroad struggle to find accessible, student-verified recommendations for activities, restaurants, and travel opportunities in their host country.

Abstract:

This study-abroad planner is a student-driven platform designed to simplify and enhance the experience of studying abroad. Students sign up with their university email to gain access to authentic, peer-generated insights on programs, destinations, restaurants, activities, and cultural experiences from those who have already been abroad. For students considering a program, the platform offers transparent reviews and ratings to help with informed decision-making. For students currently abroad, an interactive map feature visualizes nearby recommendations, enabling seamless trip planning and navigation in real time. By combining community-driven reviews with location-based tools, this platform fosters a collaborative, informed, and connected global student network.

Alternatives/Competitors:

There are websites like https://www.gooverseas.com/ that offer program reviews, but we would be able to create university specific university reviews that are more valuable. For example, if a Vanderbilt junior was planning on studying abroad, they would want to see reviews from Vanderbilt peers, potentially peers with the same major/interests. There also exists the alternative of communicating via word of mouth about the programs, while this is a social experience we would be able to centralize so much information that the benefits of our app would outweigh the social enjoyment of communicating with senior peers.

Epic/User Stories:

1. As a student who wrote a review, I want to edit or delete my submission later, so that I can update outdated information or correct mistakes. (6 hours)

2. As a student unfamiliar with the local language, I want to know which programs and locations are navigable using English only, so that I feel more confident living and studying abroad. (7 hours)
3. As a student who followed a peer's recommendation, I want to comment on their review, so that I can validate or expand on their feedback with my own experience. (7 hours)
4. As a student currently in Barcelona, I want to submit a review about a disappointing restaurant experience, so that other students can avoid similar situations. (7 hours)
5. As a student who has completed a study abroad program, I want to submit a review and rate my experience, so that others can benefit from my honest feedback. (8 hours)
6. As someone currently studying abroad, I want to find nearby student-recommended places such as restaurants and activities, so that I can explore my host city confidently and meaningfully. (8 hours)
7. As an interested student, I want to view the posting dates of reviews and recommendations, so that I can prioritize newer, more relevant insights during my planning. (8 hours)
8. As a student interested in immersive cultural experiences, I want to filter activities by categories like "local festivals" or "non-touristy", so that I can make deeper connections with the local culture. (8 hours)
9. As a student preparing to go abroad, I want to message alumni who previously studied in my host location, so that I can ask for advice or learn from their experiences. (9 hours)
10. As an interested student, I want to be able to compare programs based on cost, housing, and extracurricular activities, so that I can select the one that best fits my goals and budget. (9 hours)
11. As a user currently abroad, I want to explore an interactive map of student-reviewed locations near me, so that I can easily navigate on trusted destinations. (9 hours)
12. As an administrator, I want to review and remove flagged or inappropriate content, so that the platform remains safe and respectful for all users. (9 hours)
13. As a student who is visiting Paris, I want to find English-speaking restaurants that are popular amongst students, so that I can comfortably dine and meet others studying abroad. (9 hours)
14. As a student who is undecided on a destination, I want to browse top-rated programs across different continents, so that I can explore options I hadn't previously considered. (9 hours)
15. As a student deciding between CIEE Madrid and DIS Copenhagen, I want to view a side-by-side comparison of both programs, so that I can determine which one better aligns with my lifestyle, budget, and academic needs. (10 hours)

16. As a user planning my trip, I want to filter reviews by country, city, and university, so that I can focus only on insights most relevant to my travel and academic context. (10 hours)
17. As a student currently abroad, I want to connect with other students in my city, so that I can build a social circle with peers who share similar interests or academic backgrounds. (7 hours)
18. As a student planning a short weekend trip, I want to save and organize places I've bookmarked from peer reviews, so that I can quickly build a personalized itinerary. (10 hours)
19. As an administrator, I want to authenticate users and their enrollment in an approved university, so that access is limited to verified students. (11 hours)
20. As a student studying abroad in Scotland, I want to discover local sightseeing spots frequented by students from my home university, so that I can explore while potentially meeting familiar faces. (11 hours)
21. As a pre-med student, I want to find a study abroad program that aligns with my course requirements, so that I can stay on track with my degree while gaining international experience. (12 hours)
22. As a new user, I want to complete a short onboarding flow that helps me set my preferences (major, interests, preferred destinations), so that my homepage shows more relevant recommendations from the start. (12 hours)
23. As an administrator, I want to manage the tags and categories used in reviews, so that the platform maintains a clean and organized taxonomy of content. (12 hours)
24. As a student, I want to sign in using SSO linked to my university email, so that I can trust the platform only contains input from fellow students. (12 hours)
25. As a computer science student, I want to find programs that offer courses recognized by my department, so that I can study abroad without delaying my graduation. (14 hours)

Possible Technical Requirements:

Web: Next.js, TypeScript, Tailwind.

- Fast, user friendly server rendering, type safety and maintainability, responsive UI

Mobile: React Native (Expo).

- Cross platform development with one codebase

API: FastAPI

- High performance, easy to use, integrates well with modern Python tools.

DB: Postgres + Prisma/SQLAlchemy.

- Our app uses inherently relational data, streamlined database queries.

Search/Geo: OpenSearch/Elasticsearch; Mapbox.

- Fast geospatial queries, customizable maps and location features.

Auth: Clerk/Auth0/Cognito + custom .edu verifier.

- Secure authentication and SSO.

Infra: AWS (RDS, OpenSearch, S3, CloudFront, ECS/EKS).

- Storage, databases, and scaling handled reliability.

Deployment:

Our primary deployment will be on Vercel, ensuring fast, reliable hosting for the web application with built-in CI/CD for rapid updates. As the platform scales, we plan to transition core backend services and databases to AWS for greater flexibility, security, and scalability. For mobile users, we will package and deploy the app to the Apple App Store, with future plans to expand to Google Play for broader accessibility.

Visibility:

Our client group we are targeting is students at Vanderbilt and the study abroad office. We want this to be a resource for people to use when they go abroad, and for the study abroad office to use to promote certain programs. To keep our team members informed we will meet regularly in class and communicate via text to keep each other updated on the current progress of our project.

Challenge:

The main challenge we face is bringing together reliable, student-generated information in a way that is both trustworthy and very easy to use. We need there to be very low friction for setting up the app, and a quick path to useful information so that people actually go through with signing up to our app. Most study abroad resources are scattered, outdated, or not specific to a student's own university. The challenge is combining student voices with technology tools so that students feel confident planning and enjoying their study abroad experience. To do this we will have to do the following:

- Build a platform that students trust, verifying that all users are real students,

- Make sure reviews and recommendations stay organized and easy to search, even as more content is added.
- Create a smooth user experience that works on both web and mobile, so students abroad can access information quickly.
- Balance development speed with security and moderation to keep community safe.

Another issue that we will have is initial users. Luckily, we are at a very interconnected university, and students will be going abroad next semester so our app will be launched by then. For our MVP we will probably test with former study abroad students to get their ideas and see where we need to take the final product.

Also, given the nature of the app we will want our app to be cross platform. This will likely prove to be a challenge if we are not careful about it from the start, so we need to use a cross-platform framework and have one member focus on maintaining the IOS UI.

Project Outline:

P1 – 9/25 – Sprint 1: Core Setup & Authentication

Goal: Lay the foundationm, establish project structure, set up backend/frontend, and implement user onboarding.

Key Deliverables:

Project scaffolding (Next.js frontend, FastAPI backend)

Database schema (Users, Programs, Reviews, Places, Universities)

Basic SSO login with university email verification

Landing page with sign-up/sign-in flow

Admin dashboard for test data and moderation

Tech Focus:

Frontend: Next.js + Tailwind setup

Backend: FastAPI with REST endpoints

DB: PostgreSQL with Prisma/SQLAlchemy ORM

Auth: Clerk/Auth0 or custom domain-based SSO

Milestone Deliverable: Initial prototype (auth + skeleton UI + DB design).
 Estimated Work Completed: ~56 team hours.

P2 – 10/21 – Sprint 2: Peer Review System (Core Functionality)

Goal: Enable students to post, browse, and filter peer-generated reviews.

Key Deliverables:

Review submission form (ratings + text)

Review model with metadata (program, city, country, tags)

Browse all reviews by program/destination

Filter/sort reviews by program, university, rating

Core UI for displaying reviews (cards/list view)

Tech Focus:

CRUD API endpoints for reviews

Review UI components with filters

Basic search and sorting logic

Milestone Deliverable: Users can log in, post reviews, and view/filter reviews on web app.
 Estimated Work Completed: ~84 team hours.

P3 – 11/11 – Sprint 3: Interactive Map & Mobile Features

Goal: Add geolocation and mobile features to support students currently abroad.

Key Deliverables:

Mapbox integration for viewing student-recommended places

Location pins for restaurants, activities, landmarks

Post location-based recommendations tied to reviews

"What's Near Me" GPS view + basic itinerary/bookmark system

Mobile app shell (React Native/Expo) with feature parity to web

Admin features for moderation and user management

Tech Focus:

Geolocation APIs and map marker clustering

Backend endpoints for map-based queries (lat/long + category)

React Native mobile build with core features

Social interaction features (upvotes/comments)

Milestone Deliverable: Interactive map + mobile MVP for active travelers.
 Estimated Work Completed: ~84 team hours.

Final Report – 12/2 – MVP Polish & Launch

Goal: Polish the platform, add community safety features, and prepare for demo/pilot.

Key Deliverables:

User profiles with travel history & reviews posted

Community tools: comments, likes, report abuse

Final UI polish: animations, transitions, bug fixes

CI/CD setup + analytics tracking

Deployment to Vercel (frontend) + AWS (backend/DB)

Final report + class presentation

Tech Focus:

Deployment (Vercel + AWS RDS/OpenSearch)

Analytics and metrics (usage tracking)

Security and moderation tools

Milestone Deliverable: Deployed MVP ready for class demo and pilot testing.
 Estimated Work Completed: ~56 team hours