

Spoiled Tomatillos Project Description

Yiwen Dong, Diana Regalbuto, Fiona Tran, Jiameng Wang (Moe),
Xi Zhang (Erin)

Team 24

January 26, 2018

Overview of the Problem

Our Client

Our software development team has been contracted by a stealth startup (who we will call our client) with a new product called “Spoiled Tomatillos”. Spoiled Tomatillos will bring aspects of online movie databases like IMDB and Amazon into the social media space, creating a new platform with the potential for seamless monetization and expansion into new markets. Their team has big ideas but no technical expertise, so they have asked us to build a Phase 1 prototype of their product that will be ready to show to investors by April 2018. Our team’s prototype will prove the viability of this concept and allow our client to market Spoiled Tomatillos to potential buyers and collaborators.

Until they are acquired by a larger company, our client’s small team of “idea people” are the key stakeholders in the Spoiled Tomatillos project. We don’t believe our client is working with any other teams to develop their idea, so communication will be taking place just between us and them. We assume everyone in the startup will have a personal interest in our work, but their team is small and we should be able to gather input from all stakeholders as well as potential users during the development life cycle. Since we will be relying on resources provided by our client, we will have to remain in touch with their system administrators as well as executives to make sure our work remains within scope and is supported on the back end.

What is our client trying to achieve?

The problem our client company wants to solve is how to show movie watchers good, individualized recommendations for films they have not seen yet and aren’t sure if they’ll enjoy. Our clients believe they can solve this problem through the power of social

networks, which allow people to connect with friends and like-minded strangers to talk about shared interests and collaborate in new ways.

Our clients have conceptualized their product “Spoiled Tomatillos” as a hybrid of an online movie database and a social network. Friends should be able to share film ratings and recommendations with each other, and make plans to see popular films that are playing locally. In order to give users recommendations for films their friends haven’t seen, our clients want to use machine learning to create a predictive recommendation system based on user-to-user collaborative filtering.

The basic service of Spoiled Tomatillos will be a searchable collection of movies with information like plot, cast, awards, showtimes, like the info on sites like IMDB. Like IMDB, users can create free accounts and assign ratings to films they’ve seen. From the social perspective, Spoiled Tomatillos needs to let users find their friends on the platform and suggest movies to each other. Finally, the system will produce personalized movie recommendations based on average critic ratings, average user ratings on the site, and User-User collaborative filtering.

Why is it important for us to solve this problem?

As soon as our Phase 1 prototype starts producing good recommendations to Spoiled Tomatillos’ users, our client wants to monetize the platform by launching an affiliate program with movie theaters and digital media companies like iTunes. These businesses are unlikely to partner with our client unless we can prove our product will increase ticket sales and streaming subscriptions. By displaying movies that are available from different streaming platforms on one review site, and showing users personalized recommendations, our product will offer an enticing combination of features that has never been seen before.

In the long term, our client believes that Spoiled Tomatillos has the potential to change the state of automated recommendations by leveraging a huge database of user reviews and social connections. This technology will be very attractive to potential investors and buyers, and has value beyond Spoiled Tomatillos itself; online shoppers in the market for music, books, and other products would appreciate an algorithm that predicts things they’d enjoy. Thus, the sooner we can solve this problem the sooner our client starts making money, either by affiliate codes and partnerships or acquisition of the startup by a larger company.

Background

Legacy Systems

There is no single legacy system that Spoiled Tomatillos is replacing, and no competition exists in the space of user-to-user movie ratings and recommendations. Our product is similar to IMDB in terms of finding and reviewing movies, but IMDB does not have social features. On the other hand, Facebook's dominance of the social media landscape does not extend to ratings and recommendations for media. Neither of these existing products is good enough for our client's needs because they want to improve the way people find movies to watch by using recommendations from users' social networks.

New Aspects of Our Project

As has been stated, Spoiled Tomatillos will not be an entirely new system; it draws on the best aspects of a movie database and a social network. Both sides of the project will be familiar to users, but they will not have used them together before. However, the concept of reviewing a product and having highly-rated items recommended to you has been done before, most notably by the massively popular online retailer Amazon.

We assume our clients will sell the Spoiled Tomatillos product and brand to IMDB, Facebook, or one of these companies' competitors once it has a sizable client base and is making a profit. It is possible that our clients will sell the user-user collaborative filtering system to other businesses who want to improve their automated recommendation systems. As a stealth startup, it's unclear how our client will be able to grow its user base before acquisition; however, answering this question is not our development team's responsibility.

We don't currently know who will operate the system, but we are operating under the assumption that our clients at Spoiled Tomatillos will be acting as owners and system administrators unless the startup is purchased before development is complete. The newness of Spoiled Tomatillos affect system operators as well; for example, administrators of IMDB probably don't have to deal with users fighting with each other because of their opinions on popular movies. Therefore, we may want to develop guidelines for the people in charge of our product to help them manage their users.

Scope

Requirements

Our clients have communicated the following five requirements that our Phase 1 prototype must possess.

1. *A database of users:* Users need to be able to find each other and add each other as friends
2. *A database of movies:* Each film on the platform needs information about plot, cast, awards, and availability at local theaters
3. *A rating system:* When a user rates a movie, it should be added to ratings-based playlists for that user and contribute to future recommendations
4. *A networking system:* Users need to be able to “prod” each other with movies to see
5. *A recommendation system:* The system needs to display an average critic rating, an average rating on the site, and a rating generated via User-User Collaborative Filtering

In addition to these must-haves, our team has identified two other features that our client would probably appreciate:

1. A user profile that includes a user’s recent reviews, favorite films, and list of friends
2. A “Home Page” where a user can view live updates of what their friends have watched and reviewed lately, as well as top-recommended movies (incorporating our client’s “playlist” idea)

Our Phase 1 prototype needs to implement all of these requirements and prove that the underlying systems work. However, we are not responsible for publishing Spoiled Tomatillos on the public Internet or advertising it to potential buyers.

Non-functional requirements

In order to attract and retain users, Spoiled Tomatillos will need to be responsive and fast, keep users’ data secure, and be designed with the user in mind.

Constraints

Our team must deliver a Phase 1 prototype of the Spoiled Tomatillos product by April 2018, which is a relatively short amount of time. We are also constrained by laws that protect people's privacy online as well as Internet regulations.

Risks

The biggest risk to our team's successful completion of this project is the lack of prior knowledge. Our client does not come from a social media or machine learning background, so the challenge of joining these two products together is up to us to solve. Our team does not have experience working on a project of the scale demanded by our clients, and may encounter unexpected difficulties in implementing either the recommendation algorithms or social network features. This means some features we think will be simple to implement may actually be difficult and take longer than we thought. We also need to keep the privacy of Spoiled Tomatillos' users in mind, especially because our client is looking into ethically selling user data. If our client faces legal issues because of their business practices, it could reflect badly on our team and put the project in jeopardy.